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1. Rossett, N. E., and others: Ann. Int. Med. 36:98 (Jan.) 1952

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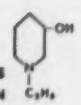

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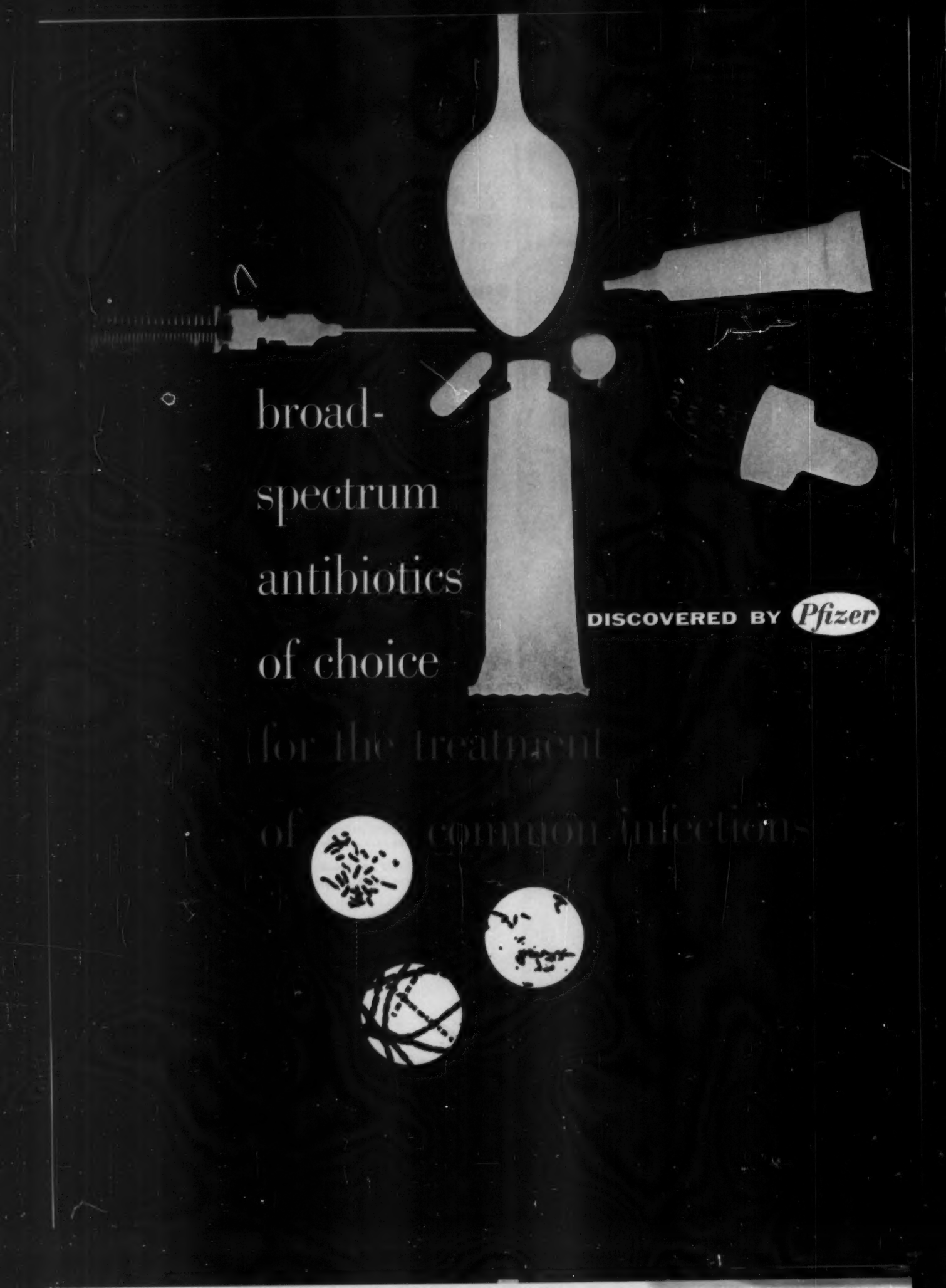
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CORONARY ARTERY DISEASE: ITS RELATIONSHIP WITH CHOLESTEROSIS OF THE GALLBLADDER. AN AUTOPSY STUDY.*

MAURICE FELDMAN, M. D. AND MAURICE FELDMAN, JR., M. D., Baltimore, Maryland.

IN RECENT years there has been considerable discussion of the relationship of cholesterol and lipids regarding atherosclerosis of the cardiovascular system. It has been generally accepted that a disturbance of cholesterol and lipid metabolism plays a fundamental role in the pathology of atherosclerosis of the blood vessels. A perusal of the literature revealed no data on the relationship of cholesterosis of the gallbladder and coronary heart disease. The purpose of this study was to investigate the possibility of a relationship between these two conditions, since in both, there is a disturbance of cholesterol-lipid metabolism. On the basis of the above premises, a study was made of 165 adult autopsies of cases of cholesterosis of the gallbladder.

Although the incidence of cardiovascular disease among the general adult autopsy material is extremely high, it would appear that if there is any relationship between cardiovascular disease and cholesterosis of the gallbladder, there should be a greater incidence of coronary disease in the latter cases. In this study of adult autopsy material it became apparent that with increasing age, some degree of cardiovascular abnormality is observed in the vast majority of cases. Because of the difficulty in comparing other vascular changes in the age group of the two conditions, we studied particularly those cases which presented evidence of coronary artery occlusion and infarctions. In our study of the 165 autopsy cases of cholesterosis of the gallbladder (126 with diffuse cholesterosis, and 39 with cholesterolotomatous papilloma) various cardiovascular changes were noted. These findings are shown in Table 1.

TABLE I

CARDIOVASCULAR FINDINGS IN 165 CASES OF CHOLESTEROSIS OF THE GALLBLADDER

Coronary occlusion and infarctions	33 cases
Coronary vessel narrowing and/or arteriosclerosis	143 cases
Myocardial fibrosis	93 cases
Dilatation and hypertrophy of ventricles	112 cases
Calcification of mitral and/or aortic valves	20 cases
Rheumatic heart disease	15 cases
Pulmonary arteries and aortic arteriosclerosis	137 cases

In order to determine the general incidence of coronary artery disease and myocardial infarctions, we reviewed 1,319 consecutive adult autopsies. Among these, we found 299 cases with coronary occlusion and infarctions, an incidence of 22.6 per cent. In the same autopsy material, there were 165 cases of cholesterosis of the gallbladder, and among these were 33 cases of coronary occlusion and infarctions, an incidence of 20 per cent. A comparison of both series of cases is shown in Table 2.

TABLE II

A COMPARISON OF THE INCIDENCE OF CORONARY OCCLUSION AND MYOCARDIAL INFARCTIONS

	1,319 Autopsies	165 cases Cholesterosis of Gallbladder
Coronary occlusion without infarction	38	9
Coronary occlusion associated with myocardial infarctions	261	24
Total cases	299 - 22.6%	33 - 20%

Comparing the incidence of coronary occlusion and infarctions of 22.6 per cent in the general adult population with the incidence occurring in cases with cholesterosis of the gallbladder, it is clearly shown that there is no significant difference in the incidence of coronary heart disease without cholesterosis than with cholesterosis of the gallbladder. It appears, therefore, from these data, that cholesterosis of the gallbladder is apparently a localized metabolic-physiologic disturbance within the gallbladder itself, having no relationship with coronary artery disease.

Coronary heart disease occurs predominantly in the male sex. Of the 33 cases of cholesterosis of the gallbladder associated with coronary occlusion and infarctions, 26 or 79 per cent were males and 7 or 21 per cent were females. Of the total number of 165 cases of cholesterosis of the gallbladder, there were 116 males or 70 per cent and 49 females or 30 per cent. The difference precentagewise is statistically insignificant.

TABLE III

THE COMPARATIVE AGES IN DECADES IN CHOLESTEROSIS OF THE GALLBLADDER AND CORONARY HEART DISEASE

Decades	Cholesterosis of the gallbladder	Cholesterosis of the gallbladder associated with coronary occlusion
30-40	8	1
40-50	23	2
50-60	50	10
60-70	52	13
70-80	25	5
80-90	6	2
90-100	1	0
Total cases	165	33

*From the Sinai Hospital, Baltimore.

We are indebted to Dr. Tobias Weinberg, Head of the Department of Laboratories, for permission to use the autopsy material.

Submitted Aug. 12, 1954.

It is noteworthy to point out that coronary heart disease is most prevalent in the 5th and 6th decades of life. In a comparison of the ages between the coronary cases and those without coronary disease, it became apparent that cholesterosis of the gallbladder also occurred predominantly in the fifth and sixth decades. Table 3 shows the ages in both groups.

The determination of plasma cholesterol values had little or no significance in cholesterosis of the gallbladder. Forty-two of our 165 cases had cholesterol determinations, yielding values which averaged within normal limits. Cholesterol determinations were made in only 4 of the 33 cases with coronary occlusion and infarctions. The results of these tests yielded findings within normal limits.

Although the cholesterol content of the gallbladder bile is greatly increased in cholesterosis, it has been conclusively shown that there is no actual relationship between the bile and blood cholesterol and lipids.

SUMMARY

This paper presents an autopsy study of the relationship of cholesterosis of the gallbladder with coronary artery disease. For this purpose, we reviewed 165 adult autopsy cases of cholesterosis of the gallbladder. Among these, there were 33 with coronary occlusion and infarctions, an incidence of 20 per cent. A comparison was made of the incidence in the general autopsy population in a review of 1,319 adult necropsies. Among these, we found 299 cases of coronary occlusion and infarctions, an incidence of 22.6 per cent. The incidence of these two conditions paralleled each other very closely. It was interesting to speculate on the relationship of cholesterosis of the gallbladder with coronary artery disease, since in both conditions, cholesterol and lipids play a major role. From these data presented, it is shown conclusively that no relationship exists between cholesterosis of the gallbladder and coronary occlusion and infarctions.

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CLINICAL OBSERVATIONS ON DIABETICS OF LONG STANDING

HENRY J. JOHN, M. D., F. A. C. P., Cleveland, Ohio.

ONE CAN learn much from observing diabetics over a period of decades. Any original test on a patient simply offers information of his status in regards his carbohydrate metabolism "for the time being." Such a status can change over a period of years in either direction. Carbohydrate metabolism is not a "static thing" but often a labile status which over a period of years can and does break down. I shall present briefly a series of such cases that I have observed in the past four decades which should serve to the younger men as a guide in the evaluation of such patients who present either glycosuria or even hyperglycemia at the time they are first seen.

When a glycosuria is found, this can be either 1. Non-diabetic glycosuria, or 2. Early diabetes. The medical problem is to settle which of the two it is Usually a Glucose tolerance test is done which gives the answer. Or, one can use a short cut to this, which is easier for the patient and the doctor as well, and simply give the patient a heavy carbohydrate meal and then check the blood and urine sugar two and a half hours from the time the patient started eating. If the blood stream does not clear itself of the excess of sugar in that time, then the patient is likely a diabetic and will need either treatment or further observation. If the blood sugar at the time of the two and a half hours is normal, then the presumption is, that he is not a diabetic. In that case he should be rechecked in six to twelve months to reinsure the original observation. It is this latter procedure that I have been using for the differential diagnosis of glycosuria. One thing which is important, is the knowledge that glycosuria does not run parallel with glycemia as will be shown in some of the cases discussed.

PATIENTS WHO WERE NON-DIABETIC BUT LATER BECAME DIABETIC

Case 1. Mrs. W. A middle aged woman who complained of nocturia. Glucose tolerance tests in 1923, 1928, 1949 were all normal. In 1952 she became a frank diabetic.

Case 2. Mrs. R. 64 years old in 1949 when I first saw her. At that time she showed a fasting blood sugar of 85 Mg%, before lunch 92 and then 2.5 hrs. after a heavy carbohydrate meal at noon, the blood sugar was 145 Mg%, glycosuria being present in the last two specimens. Thus at 64 she was mildly diabetic. However, there were two previous Glucose tolerance tests done: one in 1936 which showed:

	0	1	2 hrs.
Blood sugar	94	74	63
Glycosuria	o	o	o

One Glucose tolerance test done a month later:

	0	0.5	1	2	3	4 hrs.
Blood sugar	80	91	87	80	69	39
Glycosuria	o		o	ft.tr	o	o

Naturally, at 64, when a slight abnormality was discovered, one would only regulate her diet which proved to be adequate. But the fact remains that 13 years after the original test which turned out normal, her carbohydrate metabolism did change.

Case 3. Mr. L. In 1935 he was 33 years old. Glycosuria was found 10 months previously and the fasting blood sugar was 180 Mg.%. Thus he was put on diet. The past six months before I saw him (5-10-35) he had had no insulin and no diet. I did a Glucose tolerance test on the above date which showed:

	0	0.5	1	2	3	4 hrs.
Blood sugar	117	161	206	161	102	42
Glycosuria	o		++	+	tr	o

This at best was but a borderline case of diabetes. Thus I kept him just on a regulated diet alone. On

Submitted Aug. 12, 1954.

this he was controlled but in 1946 he developed frank diabetes.

Case 4. Mr. M. In 1935 he was 55 years old. His complaint was that glycosuria had been found lately and he had nocturia 2x. I had checked him in 1923 when his blood sugar, 3.5 hrs. postprandial was 123 Mg% and no glycosuria. Thus I did the next day a Glucose tolerance test with the following results:

	0	0.5	1	2	3	4 hrs.
Blood sugar	111	228	217	146	119	87
Glycosuria	o		o	o	o	o

In 1935 his blood sugar, 2.5 hrs. after a heavy carbohydrate meal was 300 Mg. % and a heavy glycosuria was present. Thus a prediabetic curve in 1923 and frank diabetes in 1935.

Case 5. Master F. He was 4.5 years old when I first saw him because of glycosuria. I checked him for the next 12 years, during which time he did not develop diabetes. On April 10, '24 the fasting blood sugar was 92 Mg.% and no glycosuria. Dec. 30, '26 fasting blood sugar was 76 Mg.% and no glycosuria. Dec. 26, '28 I did a Glucose tolerance test with the following results:

	0	0.5	1	2	3	4 hrs.
Blood sugar	80	163	152	97	76	43
Glycosuria	o		++	++	o	o

Thus a normal tolerance test. In 1936, when he was 16 years old, the blood sugar, 2.5 hrs. after a heavy carbohydrate meal was 46 Mg.% and he showed a trace of sugar in the urine. Thus observations for nearly 12 years, during which he remained non-diabetic.

Case 6. Mr. N. A middle aged man who in 1935 showed a non-diabetic glycosuria but in 1936 he became a frank diabetic.

Case 7. Dr. L. In 1927 he showed a non-diabetic glycosuria as shown by a Glucose tolerance test but in 1936 he developed frank diabetes and had to take insulin for a short time and on repeated tests, on diet alone, he is perfectly controlled.

Case 8. Mr. D. He was 41 years of age in 1924. Glycosuria was discovered on Life Insurance examination. The Glucose tolerance test done at that time was normal. Yet 12 years later, 1936, he became a frank diabetic, and is one to date.

Case 9. Miss P. The blood sugar 2.5 hours after a heavy carbohydrate meal was low and there was glycosuria. On normal diet she developed diabetes in a month.

Case 10. Mr. L. Middle aged man who had a Glucose tolerance test done in November which was normal and he was told that he did not have diabetes but the following January he went into a diabetic coma.

Case 11. Mr. M. Middle aged man who in 1930 had a normal Glucose tolerance test but in 1937 became a frank diabetic.

PREGNANCY GLYCOSURIAS

Case 12. Mrs. L. During her pregnancy she showed glycosuria and hyperglycemia which cleared up after parturition. Yet 29 years later she developed frank diabetes.

I also have a record of three other young women who developed frank diabetes during pregnancy.

GLYCOSURIAS VERSUS GLYCEMIA

Case 13. Mr. F. Male, 56 years of age. On 4 January 1954 the checkup showed:

	8	11	3
Blood sugar	97	65	32
Glycosuria	o	+	+

This man is on 34 units NPH insulin a day.

Case 14. Mrs. Ch. Age 42. On Oct. 12, 1953 the checkup showed:

	8	11	3
Blood sugar	107	34	81
Glycosuria	o	++	++

This lady was on 40 units NPH insulin a day.

Case 15. Mrs. S. 59 years of age. On Oct. 29, 1953, the checkup showed:

	8	11	3
Blood sugar	194	214	116
Glycosuria	o	o	o

This lady was taking 15 units Protamine Zinc insulin a day.

Case 16. Mrs. W. 54 years of age. On Dec. 28, 1953, the checkup showed:

	8	11	3
Blood sugar	70	60	294
Glycosuria	+	++	++

No insulin that day.

Case 17. McG. Age 14. On Dec. 15, 1951, the checkup showed:

	8	11	3
Blood sugar	73	68	37
Glycosuria	++	++	+

She was taking 28 units PZI and 40 units Insulin.

Case 18. Miss T. Age 6.5 years. On 12 January 1951 the checkup showed:

	8	11	3
Blood sugar	35	73	70
Glycosuria	+	+	o

She was on 10 units PZI and 10 units Insulin.

Note: Urine markings—o is no sugar, Tr. is green, + is yellow, ++ brick red.

DIABETES IN TWINS

Case 19. The first twin developed diabetes in 1935 at the age of 50.

The second twin developed diabetes in 1950 at the age of 65.

Their father died of diabetes and there are 2 sisters who are diabetic.

INFECTION AGGRAVATING DIABETES

Case 20. Girl 17 years old. She was taken to hos-

pital because of abdominal tenderness to be operated on for appendectomy. Fortunately before she went to the operating room, her blood sugar was discovered to be 450 Mg% and she showed a heavy glycosuria. She was straightened out quickly and was perfectly controlled on 10 units PZI in the morning. In 1.5 years all insulin was discontinued and she continued to show a perfect control. Next she developed a gastrointestinal upset and the blood sugar went up to 563 Mg% and she showed a heavy glycosuria. Again she was straightened out on heavy dosage of insulin, 80 to 90 units a day. In 1952 she is fairly well controlled on 8 units of Insulin in the evening. She is finishing college and getting married.

FAMILIAL DIABETES

Case 21. Master G. Developed diabetes at 10 years of age, in 1934. In 1936 his brother, aged 4, developed diabetes. Both paternal and maternal great-aunts had diabetes. In the younger boy it was his mother who discovered the glycosuria. The fasting blood sugar the following morning was 62 Mg% and the 2.5 hour postprandial blood sugar was 243 Mg%.

LOW BLOOD SUGAR DOES NOT NECESSARILY MANIFEST ITSELF IN AN INSULIN REACTION

Case 22. Miss W. 18 years old. Had diabetes for 2 years. When she was first examined her blood sugars tid., ac, were: 116-47-25 and no glycosuria present. There were no symptoms of insulin reaction. She was taking then 20 units PZI and 40 units Insulin in the morning. Naturally the dosage had to be reduced.

DIABETES FOLLOWING INFECTION

Case 23. Mr. L. Middle aged man, colored. In 1951 he had a non-diabetic glycosuria. He developed a perineal abscess in 1952 which was followed by frank diabetes.

It is a well known fact that various types of infections do bring on diabetes either in a few days or sometimes as much as 90 days later. It is reasonable to presume that these children had an inadequate insulogenic reserve, what the Germans call "Minderwertigkeit" and for that reason do break down following an infection. This is a point which is hard to prove, as we have no data, no proper work-up of the preceding years which would give us a definite clue to this problem. Children do not have a Glucose tolerance test done just for the sake of scientific information unless there is some indication for it. For that reason we lack the background information and it is a point very much worth while to consider.

In Table I I have charted data on 163 children who developed diabetes following infections of various types, and the length of time it took before diabetes was discovered, following the infection. The time to watch for diabetes is after any of these infections and one must bear in mind this possibility and do periodic blood and urine examinations so that if diabetes does appear, it can be recognized as early as possible.

TABLE I

ONSET OF DIABETES IN 162 CHILDREN FOLLOWING INFECTIONS

No. days	Scarlet fever	Mastoiditis	Pyelitis	Infectious diseases	Abscessed teeth	Poliomyelitis	Septic endocarditis	Jaundice	Glandular fever	Nephritis	Tonsillitis	Boils	Toxemia	Pneumonia	Dysentery	Measles	Influenza	Mumps
1-10		1	1				2			2	1		2	4	3	7	4	
11-20	1	1	2				1	1		1				3	3	6	1	
21-30						1		1			2		4	2	1	15	1	
31-40					1				1	1					1	1		
41-50					1			2							1	4		
51-60											1		2		2	6	1	
61-70	1	1											1		2	1		
Not stated				23		1			2			3		3		1	24	
Total	2	3	3	23	2	1	1	3	4	3	4	4	3	9	12	13	41	31

Diabetes appears not only in children following infections, but in adults as well. I have seen in adults diabetes appearing shortly after quinsy, mumps, pneumonia, cholecystitis and jaundice. It certainly is not uncommon.

SUMMARY

In this short paper I presented a group of cases from everyday practice, all of whom have shown interesting findings. Non-diabetics at first, later becoming diabetics. The lack of relationship of glycosuria to hyperglycemia. Women developing diabetes during pregnancy: some remaining diabetics, others clearing up after parturition. The development of diabetes in identical twins which may be simultaneous, or there may be an interval of several decades (1). How an infection aggravates diabetes or else precipitates it in a short time. How a patient can have a very low blood sugar, as low as 20 Mg% and still feel perfectly well and not be conscious of his hypoglycemia. This I see quite often.

These are practical items which one should bear in mind and be on the lookout for the possibility of diabetes or the opposite, the lack of diabetes in the presence of glycosuria. This latter point must, however, be carefully worked out so as not to be misled in the diagnosis.

REFERENCE

1. Henry J. John: "The Diabetic Child," Etiologic Factors. Annals Int. Med., 1934, 8:198-213.

TREATMENT OF ARTERIOSCLEROSIS AND VAGUE ABDOMINAL DISTRESS WITH NIACINAMIDE HYDROIODIDE (WITHOUT SIDE-EFFECTS)

THEODORE M. FEINBLATT, M. D.,* HENRY M. FEINBLATT, M. D., F. A. C. P.**
AND EDGAR A. FERGUSON, JR., CHEMIST, Brooklyn, New York.

THE CLASSIC clinical syndrome of "arteriosclerosis" has not altered since Virchow described his "endarteritis deformans" (1). But many more individuals now suffer from the disease, because of greater longevity and an aging population, which has been brought about by increasing public health measures and advances in specific medical treatment (2).

Controversy over the various causes and mechanisms has placed emphasis first on one etiological factor then on another. Virchow (1) felt that it was an inflammatory process. Marchand considered it an "essentially degenerative and hyperplastic" change in the arteries. MacCallum seems to be the first to mention the fat accumulation (3) which theory has given rise to low-fat, low-cholesterol treatments.

Whatever theory holds it is well known that with advancing age the arteries lose elasticity. Associated with this change the muscularis tends to atrophy and undergo fibrous tissue replacement. These alterations generally begin in the thirtieth or fortieth year of life and become well marked ten or twenty years later.

Modern writers (4) regard "arteriosclerosis" as atheromatosis—the process in which arteries become less elastic, characterized by formation of soft atheromatous plaques containing cholesterol, which may later become infiltrated with calcium salts. This vascular change causes the clinical symptoms usually associated with "arteriosclerosis." Diminution of blood supply to particular vital organs, such as brain, heart, kidneys, or gastrointestinal tract (13) may cause manifestations of mental aberration, coronary disease, or vague abdominal distress. The age of appearance of such local disorders depends on genetic factors. These changes are characterized by a vast complex of clinical symptoms. The syndromal picture is often complicated by the simultaneous occurrence of hypertension.

Vague abdominal distress is one of the most difficult of the clinical syndromes associated with the arteriosclerotic process to treat. This functional gastrointestinal disorder is revealed by changes in motility, secretion, and the inability to properly absorb foods to maintain normal nutrition (5).

It has been popular to regard the syndrome of vague abdominal distress rather lightly as being of psychic origin. While psychic changes may occur simultaneously, vague abdominal distress may be caused by changes in the vegetative nervous system and by uncoordinated and abnormal functions of the gastrointestinal tract (6, 7). These changes become more severe with increasing severity of the arteriosclerotic process. No particular gastrointestinal symptom should be emphasized as indicative of the syndrome. Because of the vague nature of the syndrome various series tend to emphasize different individual symptoms (8). Among the symptoms particularly noted are, increased motility, nausea, flatulence, diarrhea, belching, constipation, epigastric pain, and spasticity.

Submitted Aug. 6, 1954.

*Asst. Visiting Physician at Kings County Hospital, Brooklyn, N. Y.

**Formerly Director of Medicine at Kings County Hospital, Brooklyn, N. Y.

MEDICATION USED

The medication used was Niacinamide Hydroiodide in combination with iodides. This has been found most conveniently given in the form of tablets* supplying 50 mg. of Niacinamide Hydroiodide and 270 mg. of Sodium Iodide per day (2 tablets). In some cases this dose has been given in multiples of two or three times without untoward effect. In many cases it has been desirable to begin medication with large intravenous doses of Niacinamide Hydroiodide 100 mg. and Sodium Iodide 1 gram** twice weekly. This has been continued for one or two months after which tablets were given to maintain medication.

CASE SUMMARY

The average patient in the group of fifty-nine cases (from which essential hypertension was eliminated) had a blood pressure of 149/87. This was unaffected by the medication.

While there were a few overweight individuals in the group the average patient was within normal limits. The average weight was 149 pounds.

Twenty-six cases out of fifty-nine, showed the classic sign of arcus senilis. There were thirty-six cases of the fifty-nine, which demonstrated various degrees of enlargement, sclerosis, and calcification of the aortic arch. Rubra was present in 18 cases. There was no change after treatment.

Forty-five of the fifty-nine cases showed varying degrees of vague abdominal distress. This was completely relieved in thirty cases, partially relieved in nine cases, and unchanged in six cases.

Fifty-five of the fifty-nine cases had varying degrees of dizziness. After medication dizziness persisted in only sixteen cases—clearing in thirty-nine cases.

Thirty-three of the group exhibited chronic headache. After medication headache persisted in only thirteen cases.

*The combination was supplied as Iodo-Niacin in tablet and ampule form by The Cole Chemical Company of St. Louis, Mo. The tablet formula was Sodium Iodide 135 mg. and Niacinamide Hydroiodide 25 mg.

**The ampule formula was: Each 5 cc. contains—Niacinamide Hydroiodide 100 mg., Sodium Iodide 1 Gram.

Disturbed orientation was exhibited by twenty-four cases. Twelve of these were relieved by medication.

Excessive fatigue was experienced by fifty-one of the fifty-nine cases. After treatment thirty cases still complained of excessive fatigue.

Before retest, each patient had been on medication for three months. Improvement persisted for over one year during medication in all cases.

DISCUSSION

Improvement in the clinical syndrome of "arteriosclerosis" has thus been maintained in a clinical series. Medication with Niacinamide Hydroiodide was sustained, but there were no signs of iodism or other untoward effects.

Because of the close chemical relationship of iodine and bromine (9) the same mechanism is postulated for iodism as for bromism. Iodism and bromism (10) are caused by poisoning of co-enzyme I and II (11). These co-enzymes function in the promotion of cellular oxidation. This poisoning is prevented by Niacinamide Hydrobromide and, in the present medication, by Niacinamide Hydroiodide, which supplies the integral part of the molecule of di-and-tri-phosphopyridine (12) (co-enzymes I and II).

Iodism, bromism, and pellagra are caused by poisoning or deficiency of the di-and-tri-phosphopyridine nucleotides. Iodism, bromism, and pellagra have characteristic signs and symptoms referable to the skin. The iodides particularly, however, cause catarrh of the respiratory passages. Iodism may arise from comparatively small quantities of iodide and is most commonly seen when administered repeatedly (13). The exposed areas are most affected. Acneform lesions, erythematous patches, or papular eruptions together with gastric distress are most common. Iodism is often so severe that it precludes the use of the ordinary iodine salts (13). However, no such disagreeable consequences have been experienced with the use of Niacinamide Hydroiodide in combination with iodides.

Recent research has explained how iodism, bromism, and pellagra are related to porphyrinurea (14, 15, 16, 17) by impairment of the co-enzyme mechanisms.

This report shows the clinical counterpart of the above noted chemical and laboratory relationships. Clinical findings demonstrate that Niacinamide Hydroiodide when used alone or in combination with metallic iodides has not caused iodism or untoward symptoms in any of this series of more than fifty cases.

Thirty-three females and 36 males, ranging in age from forty-three to eighty-four, with an average of sixty-one years were treated and observed for more than a year. No case developed respiratory catarrh, skin eruptions, or any other untoward reaction to the Niacinamide Hydroiodide whether used alone or in combination with sodium iodide.

CONCLUSIONS

1) The signs and symptoms of "arteriosclerosis" as a clinical entity are reviewed.

2) The beneficial effects of iodide treatment combined with Niacinamide Hydroiodide on the signs and symptoms of arteriosclerosis including vague abdominal distress have been shown.

3) The rationale of the use of an iodide containing the integral portion of the molecule of the co-enzymes to prevent iodism in the form of Niacinamide Hydroiodide is explained.

4) The mechanism of iodism is discussed and correlated with bromism and pellagra as a dysfunction of the co-enzyme oxidation mechanism.

5) Absence of iodism, or any untoward effects from Niacinamide Hydroiodide is shown in a large clinical series treated for over a year.

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THE CAPILLARY SYNDROME IN VIRAL INFECTIONS: TREATMENT WITH CITRUS FLAVONOIDS*

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INFLAMMATORY processes occur in many viral diseases, often in an acute form. The question as to whether the inflammation is a primary or a secondary phenomenon is still under discussion. Thus in certain viral infections, some workers have regarded the various alterations in the skin from their inception as the manifestation only of an acute inflammatory process. On the other hand, Rivers (1) has demonstrated that Purkinje cells in monkeys with louping-ill are lysed before clear evidence of inflammation appears. Of whichever nature viral inflammations might be, they often induce grave clinical complications which deserve the full attention of the physician.

One of the important features of viral inflammation is *the capillary syndrome*. This term was first introduced by Eppinger (2) in connection with the protein-leakage that occurs into the tissues. In viral inflammations, the endothelial cells of the capillary wall are often invaded by virus particles, the intercellular cement is degenerated and an increased capillary fragility appears. Through the damage to the capillary system, generalization of viral infection is enhanced and inflammatory phenomena intensified. In normal conditions, with a properly functioning capillary wall, the viral particles cannot penetrate into surrounding tissue for, as Danielli and Stock (3) have pointed out: "All the evidence available goes to show that the capillary wall in a normal tissue is comparatively impermeable both to serum albumin and to serum globulin." And since viral particles are, as a rule, larger than albumin molecules, they penetrate the capillary wall only when the pores of the intercellular cement are altered.**

The role of the capillary syndrome in viral infections seems to be much greater than has heretofore been recognized. Capillary damage and subsequent transudation into the tissues are present in many viral infections and have been proved experimentally and clinically.

Thus in viral hepatitis, caused by an epitheliotropic virus (Thaler's), there is a gross injury to the capillary system of the hepatic lobules and consequently severe disturbances in blood flow. These disturbances of blood flow, associated with capillary damage, apparently are the chief cause of the destruction of the cells of the central parts of the hepatic lobules. As Lyon (4) emphasizes: "The chief object of attack in viral hepatitis is the hepatic capillary bed." With the capillary wall once injured, transudation into the tissues takes place, and excessive acute hepatic necrosis may occur. In the fulminant form of the disease, an intense inflammatory response and profuse hemorrhages are present, according to Lucke and Mallory (5). In the subacute form of disease in which death occurs 3 to 6 weeks after onset, necrosis of the liver is less pronounced but phlegmonous inflammation and hemorrhage of the stomach and intestinal walls are often revealed on necropsy.

In poliomyelitis, there is a considerable reaction to neuronal necrosis among the various types of mesodermal cells participating in inflammation. Neighboring small venules, arterioles and capillaries are affected, perivascular cuffs are formed and edema is present (Bodian and Howe (6)). Although severe paralysis may occur without important vascular involvement, the presence of edema in poliomyelitis has been emphasized by numerous authors. Bower *et al* (7) found a decrease in the albumin content of the plasma in rough parallelism to the severity of the disease in acute poliomyelitis. They attributed great importance to the edema in this disease, which is caused by increased capillary permeability. All efforts, according to them, should be made to influence the dynamics of certain events in poliomyelitis in order "to break the vicious cycle of edema and anoxia and tend to reduce paralysis to that caused by the action of the virus on specific neurons."

As Lyon (4) points out, "in poliomyelitis, the degree of destruction of specific neurons may be at once due to direct viral action and due to edema as the sequelae of a primarily disturbed blood flow and, possibly, of lowered serum albumin." Recently, Letterer (8) experimentally showed that lesions of parenchyma of a similar nature can be produced by an increased capillary permeability, and especially without dysproteinemia. All these facts seem to indicate that the damage to the capillary system in poliomyelitis might be of a greater significance than has been realized heretofore.

In smallpox, the capillary syndrome is also present, according to Wolman (9), who found inclusion bodies and extracellular virus aggregates within the endothelial cells lining the blood vessels of various organs. The observations of Svertson and Hyman (10) suggest that in smallpox, increased capillary permeability with escape of protein through the capillary wall into the tissue spaces might lead to profound and consistent loss of plasma, to altered hemodynamics and peripheral circulatory failure.

In measles, the capillaries of the corium are damaged in the incipient stage of the disease, and petechiae and purpura often are present according to Miller (11). In cases of encephalomyelitis, the central nervous system shows, in the gross, congestion and petechial hemorrhages. Early cases show perivascular hemorrhages (Rake (12)).

In primary atypical pneumonia, the capillary syn-

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**The virus particles of foot-and-mouth diseases are exceedingly small, with a diameter of 12μ or about the size of small protein molecules. The majority of other viruses are larger.

drome is well pronounced. The pneumonic areas appear hemorrhagic, the bronchial mucosa inflamed, and bloody fluid may exude (Horsfall (13)).

In mumps, in the case of severe orchitis, there is marked congestion of blood vessels, punctate hemorrhages, edema and exudation (Enders (14)). In the viral disease of herpes simplex, "the corium of both skin and mucous membrane shows pronounced capillary dilatation and infiltration of inflammatory cells. . . . In the nervous system . . . there are local areas of dusky discoloration, studded with petechiae. . . . The appearance suggests encephalomalacia due to circulatory disturbance . . . and the capillaries show endothelial hyperplasia" according to Scott *et al* (15).

In virus A influenza, there is an inflammatory reaction in the submucosa, and often epistaxis. Brightman (16) found in experimental animals infected with influenza virus A, peribronchial lesions with congested alveolar capillaries and hemorrhages. In the common cold, vascular engorgement and edema of mucous membrane are predominant, indicative of an increased capillary permeability.

In rabies, vascular congestion, edema and perivascular hemorrhages are present. Strumpell's disease, or acute epidemic leuko-encephalitis, is characterized by predominance of large or small hemorrhagic foci throughout the central nervous system. "The pathologic picture in the CNS is one of congestion of arterioles and capillaries" (Olitzky (17)). Edema, vascular congestion and small hemorrhages are also present in St. Louis encephalitis.

This brief review of the capillary syndrome in viral infections suggests that involvement of the capillary system is much more frequent and common in these diseases than has generally been appreciated. It is possible that the damage to the capillary wall is one of the factors contributing to the generalization of viral infection. For, once the capillary wall is damaged, the viral particles penetrate unopposed through it and invade the surrounding tissues and organs of the organism. It is from this point of view that an attempt was made to apply a therapy which would prevent or minimize the capillary injury in certain viral diseases.

The work of Armentano *et al* (18), Bacharach *et al* (19), Scarborough (20), Griffith and Lindauer (21), Sokoloff *et al* (22), and others, have established the specific activity of vitamin P, otherwise known as bioflavonoids, in regard to capillary fragility phenomena. The usefulness of citrus bio-flavonoids in certain hemorrhagic conditions, in which an increased capillary fragility was present, such as in tuberculous hemoptysis, was emphasized by Sokoloff and Eddy (23). Puig-Muset (24) and Sokoloff *et al* (25), on the basis of their histochemical investigations, suggested that vitamin P has a specific affinity for the intercellular cement of the capillary wall.

Recently, C. D. McKeen (26) reported that the pressed juice of sweet pepper has an inhibitory influence upon the infectivity of cucumber mosaic, ringspot and tobacco etch viruses. Although the author does not specify the chemical nature of the inhibitory substance present in sweet pepper, it is well known that this vegetable is rich in bio-flavonoids.

In their clinical studies, Biskind and Martin (27) treated 23 cases of acute follicular tonsillitis, rhinitis, influenza and other upper respiratory infections of viral origin with citrus flavonoids with encouraging results. According to them, in all cases treated except two, "recovery occurred in from 8 to 48 hours, usually in 24 hours." In influenza and acute follicular tonsillitis administration of the flavonoids "led to recovery by crisis in 48 hours with profuse perspiration, rapid drop in temperature and subsidence of the pharyngeal [and other] lesions." The authors believe that the dramatic results which they have obtained with the flavonoids in treatment of viral upper respiratory infections "suggest that the flavonoids operate in the infections by decreasing capillary permeability."

In our present studies, five cases of virus influenza were treated with the flavonoid compound combined with ascorbic acid.** The flavonoids were administered in a dosage of 200 to 300 mg. every three or four hours for 36 to 48 hours. In all the treated cases, the results of this therapy corresponded to those observed by Biskind and Martin. In two cases, in which acute tracheobronchitis was present, persistent cough subsided after 48 hours. There was rapid drop in temperature with profuse perspiration.

The following two cases may be given as typical in their response to the flavonoid therapy:

E. L., female, white, age 39. Past history revealed acute follicular tonsillitis with pharyngitis. Onset of the disease abrupt, with chills, nasal discharge, hoarseness, fever 104°. Persistent cough, muscular pain and general prostration. Complained of nose bleeds.

Examination: The nasal mucosa was swollen. The soft palate was red. Pulse: 120. There was no cardiac involvement. The urine showed a trace of albumin. WBC: 3600. Hirst test (serum-inhibition-of-hemagglutination) positive for virus A influenza.

Diagnosis: Virus A influenza. Moderate tracheobronchitis.

Treatment: Flavonoids, 300 mg every three hours for 48 hours. Total dose: 4.8 gm.

Results: Epistaxis arrested completely after six hours. 24 hours after the treatment was initiated: profuse perspiration, temperature normal, nasal mucosa slightly swollen but of a more normal appearance. Nasal discharge thickened. Cough subsided to a considerable degree but remained for another three days.

M. K., male, white, age 14. Past history showed chronic tonsillitis. Frequent colds. Onset abrupt, with chills. Excessive nasal discharge. Fever 103°, Extreme prostration, cough. Persistent epistaxis.

Examination: The nasal mucosa very red and swollen, bleeding easily. Pulse: 132. WBC: 6400. Urine: normal. Hirst's test (serum-inhibition-of-hemagglutination) positive for virus A influenza.

Diagnosis: Virus A influenza. Moderate tracheobronchitis.

**The preparation employed (C. V. P.®) is a combination of equal parts of the whole water soluble citrus bioflavonoid complex (22) and ascorbic acid. The dosage given in the text is that for the flavonoid component only.

Treatment: Flavonoids, 300 mg. every four hours for 48 hours. Total dose: 3.2 gm.

Results: Epistaxis arrested after five hours. Profuse perspiration took place 18 hours after the therapy was initiated with rapid drop of temperature to normal. Nasal discharge stopped. Nasal mucous membrane normal after 24 hours. Cough subsided after 48 hours.

COMMENT

In both these cases of virus A influenza, the infection responded promptly to flavonoid therapy. Epistaxis was arrested within five to six hours.

SUMMARY

The capillary syndrome is present in many viral infections and is involved in the inflammatory processes.

Citrus flavonoids, otherwise known as vitamin 'P' or capillary permeability factor, minimize the injury to the capillary wall induced by viral infections.

Five cases of virus influenza were treated with citrus flavonoids (C.V.P.) with encouraging results.

The therapeutic effect of flavonoids in viral infections might be interpreted as the result of improved functioning of the capillary system.

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SCURVY IN NEBRASKA: I. THE EPIDEMIC OF SCURVY AT CANTONMENT MISSOURI (FORT ATKINSON), NEBRASKA, 1819-1820

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LAST YEAR marked the bicentennial of the publication of James Lind's famous book in 1753 entitled "Treatise of the Scurvy." It was Lind's experiments upon twelve sailors afflicted with scurvy and described in this book which put final conviction to the fact that scurvy is a nutritional disease easily prevented and easily cured. In spite of the fact that the cause, the cure, and the prevention of scurvy were known even long before the time of Lind, this disease continued to be the cause of thousands of preventable deaths. Scurvy continued to be the sailor's calamity, the soldier's calamity (1), the explorer's calamity, the settler's calamity, the baby's calamity,

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and the calamity of individuals, such as bachelors and widowers, who tried to subsist by reason of lack of knowledge or lack of funds on a restricted diet destined to develop scurvy.

Scurvy was by no means an unknown disease in the medical history of the United States Army. In the early days of the republic scurvy oft made its appearance among our soldiers stationed along the frontiers of our expanding territory. This disease may be accounted for by the fact that the rations of the soldier at that time were not as nutritionally adequate as they are at present. Although our early army surgeons well knew that the rations had to be supplemented with fresh food, including fruits and vegetables, to prevent scurvy, these foods were at times unavailable. The military status of the army surgeon at that time did not help the nutritional situation. His advice and suggestions as to hygiene, sanitation, and nutrition went frequently unheeded by the line officer. The necessity of including an antiscorbutic in the United States Army received very late recognition. During our own Civil War or War Between the States, there occurred during the five and one-sixth years covered by statistics, 30,714 cases of scurvy and 383 deaths from this disease (2). Indeed it was as late as thirty years after the Civil War that army regulations made provision for the inclusion of antiscorbutics in the ration (3).

The Louisiana Purchase made in 1803 added to our young country a vast area mostly unexplored. When this large area came into our possession, traders from the fur companies of St. Louis and of New Orleans, the latter then a Spanish possession, had already penetrated the great plains to do business with the Indian tribes. Trade relations with the Ponca Indians along the Niobrara River in what is now northeastern Nebraska had already been established by Morier in 1790. In 1796 white agents of the Commercial Company had made contacts with the Mandan nation. In due time English traders from Canada came into the newly acquired territory and had made contact with the Indians living at the headwaters of the Mississippi River (3a).

The intrusion of the British fur traders into regions belonging to the United States aroused the Federal Government to a decision to enforce the laws protecting the American fur trade. It was in accordance with this decision that Secretary of War Calhoun, on March 18, 1819, ordered the Sixth United States Infantry Regiment stationed at Plattsburg, New York, and commanded by Colonel H. Atkinson, to proceed to establish a military post at Council Bluffs* on the upper Missouri River, a site recommended years previously by Captain Meriwether Lewis and Lieutenant William Clark as suitable for an encampment. The encampment established there towards the end of 1819 was successively called Camp Missouri, Cantonment Missouri, and Fort Atkinson, after the officer who at one time had command of the Sixth Infantry Regiment.

The Sixth Regiment of Infantry previous to taking up its march westward had been garrisoned for nearly three years at Plattsburg, New York. There it had experienced none of the hardships and privations of military life, but only its relaxations and gaieties. Many of the enlisted men were better fitted for the ordinary duties of garrison life, but were not well fitted to undergo the difficulties that awaited them on their arduous trip.

The regiment left Plattsburg March 20, 1819. It arrived in Pittsburg May the first of that year. There they remained one week to embark on board transports for St. Louis. During the passage down the Ohio River on their way to St. Louis, the confinement on board the boats and the use of the extremely turbid river water added to the sick list. Arriving at St. Louis June the eighth, in a feeble condition, the regiment went into camp at Belle Fontaine. The excessively hot weather prevailing at that time did not restore their vigor, but on the contrary added to their enfeeblement. According to Surgeon Mower, the soldiers seemed to experience the same languor felt by men living in northern areas on passing to tropical climes. At St. Louis the Sixth Infantry Regiment was joined by the New Hampshire Rifle Regiment.

On July 4, 1819, in accordance with the orders of Colonel Atkinson, the regiment embarked on the steamboat "Thomas Jefferson" and four keel boats or barges for their final destination which was Council Bluffs on the Missouri River. The steamboat developed mechanical trouble after having sailed for three hundred miles. The failure of the "Thomas Jefferson" necessitated the transfer of the troops and the cargo to the keel boats or barges which were propelled by sails.

According to Surgeon Mower, "without the experience of watermen, the troops had to contend with a torrent, which, in point of rapidity and natural obstructions, was perhaps without parallel. The struggles against the current often compelled the men to plunge into the water to free the boats from snags and sand bars. Most of the flour and corn was damaged by frequent wetting. The narrow channel of the Missouri at low stages of water, the frequent and sudden bends made useless the sails. The barges had to be propelled by the cordelle and setting poles. This arduous way of ascending the river required severe exertion. After these severe exertions the several companies composing the regiment reached the place of destination between the third of October and the fourth of November."

The Department Order issued November 2, 1819, gave official recognition to the establishment of the new military outpost.

Headquarters, 9th Mil. Dep.
Camp Missouri 2nd Nov. 1819

Dept. Orders:

A military post is established at this place and is to be called and officially known, as soon as the barracks are

*The Council Bluffs where the army post was established was located in Washington County, Nebraska, some sixteen miles up the Missouri River northwest of Omaha. The site of the post now adjoins the present town of Fort Calhoun. Council Bluffs received its former name from a bluff overlooking the Missouri River. Near this bluff Lewis and Clark held two councils with the Otoe and Missouri Indians August 3, 1804, and with the Omaha Indians a little farther up August 10, 1804. The correct name is Council Bluff not Council Bluffs. The relentless Missouri long ago in changing its channel wiped out the spots where Lewis and Clark held their councils with the Indians.

erected, by the name of Cantonment Missouri. The command of the fort is conferred upon Lt. Col. Morgan, who will call on the Commandant of the Department for special instruction, relative to the duties of his Command (4).

(Signed) T. F. Smith,
Act. Asst. Ajt. Gen'l.

It was not, however, until December 20, 1819, that the principal barrack buildings and hospital had been completed as well as the shops, the armory, and the barracks.

The weather that year was unfortunately bad. The temperatures during October, November, and December of 1819 varied from 88° to 10° F. below zero. A killing frost occurred September the twenty-fifth. The latter part of December and the whole of January were excessively cold. The mean temperature for January was 8 degrees 62 minutes. The temporary shelters and even the permanent barracks thrown up from green material of the woods, proved but a feeble barrier to the inclement weather.

The history of medicine in Nebraska, just as the history of medicine in California, begins with an epidemic of scurvy. The first physicians who came to Nebraska were involved in this epidemic. They were Army physicians, Surgeon John Gale of the New Hampshire Rifle Regiment, and Surgeon Thomas G. Mower of the Sixth Regiment of Infantry. Still another name connected with the epidemic was one Surgeon's Mate Nicoll of the Sixth Regiment of Infantry and Surgeon's Mate Malone of the New Hampshire Rifle Regiment. Another physician connected with the troops was Dr. Presley W. Craig, but his name does not figure in the military records in relation to this disease.

The food even at an early date became a problem for the commander of the post. On August 26th, 1819, the following order was issued:

Detacht. Order:

The board of Survey having inspected the Beef and Pork pursuant to Detachment Order of this date are condemned. Eight hundred and ninety-seven pounds of pork and two hundred and fifty-four pounds of beef which on account of its remote situation from the market cannot be disposed of at any price (5).

(Signed) J. Bliss, Cap., 6 Inf. Comdg. Detacht.

Fresh beef, issued to the troops since their arrival in the usual proportion, was in the latter part of January restricted to the use of hospital patients. Unfortunately the surrounding country did not abound in game, a good source of antiscorbutic food. Furthermore, the regiment had no expert hunters. The beans, peas, and vinegar gave out. The rations thereafter consisted of salted pork and beef, bacon, flour, and Indian corn. Most of the meat was putrescent, evil of smell and taste, and was unfit for issue. The flour had become musty. The corn furnished in proportion of two pints to every six rations was usually thrown aside. There were no vegetables. The food of the soldier was nutritionally deficient in many respects. It was certainly deficient in the antiscorbutic factor. It was unpalatable and unwholesome. On such diet deficiency disease was bound to make its appearance.

As early as October of 1819 the length of the sick call brought anxiety to the commandant, and the surgeons were urged to take solicitous care of the sick.

Camp Missouri
October 13, 1819

Regimental Orders:

In the future the Surgeon will exhibit every morning to the Commandant of Companies a statement showing the names of the men on the sick report in quarters who require issue of fresh beef and it will in the future be the duty of the commandants respectively to note in the margin of their Provisions return the quantity of fresh beef required.

The Commissary on receiving their reports will have them consolidated and issue the quantity required, conformably to the requisition to the Quarter Master Corporal of Companies. The increase of the sick report renders it imperiously incumbent on the Surgeon to visit the sick frequently during the day, to attend to their wants, and report immediately any necessary which can be procured for their comfort or convenience in which it is confidently expected that the commandants of Companies will not decline any assistance which may be deemed requisite on their part (6).

(By Order) Chas. Pentland, Ajt. R. R.

In the garrison orders dated January 23, 1820, the Commander set down instructions to the officers and men. The tone of the order indicated that the Commander was alarmed at the spread of the disease.

Cantonment Missouri
23 Jany 1820

Garrison Orders:

The Commandant had hoped when the troops had got in Quarters they would soon have been restored to health, but he observes with concern the sick list daily augment. At the present moment the sick must claim the first and chief attention of the Commandants of Corps and yet it has not already been done, ample and comfortable Quarters must without delay be provided for their reception.

A Captain will be detailed weekly as officer of the Police. He will be responsible that the parade and the environs of the Cantonment will be kept free from filth of every description.

He will visit the Quarters daily and occasionally during meal times. He will report when relieved in writing which will be spread upon the records of the garrison and published in orders. The officer of the day is confined to his ordinary duties. The practice of throwing slops and filth near the gate ways, or near the Cantonment is forbidden for the future. These things must be carried a considerable distance from the Cantonment (7).

(Signed) T. F. Smith
Act. Asst. Ajt. Gen'l

On January 26, 1820, another order was issued concerning the distribution of food.

Cantonment Missouri
Jany 26, 1820

Garrison Order:

The issue of fresh beef hereafter will be confined to the sick. It will be issued in equal quantities to the two corps at this place and will be distributed among the sick in such manner as the Surgeons of Corps may direct (8).

(Signed) W. Morgan, Lt. Col. R.R. Cmdg.

Surgeon Mower's report to Joseph Lovell, Surgeon General, U. S. Army, indicated the seriousness of the epidemic of scurvy. To quote from the report: "Early in this month (January) a scorbutic taint was perceptible in some of our patients who were laboring under other diseases. At first the cases were mild and appeared to yield, in some measure, to treatment. During the whole of this month it was noticed that the recovery of our patients was peculiarly slow and precarious. In many cases, after the acuteness of the disease has been subdued, the sufferer continued to languish and decline. Early in February the progress of

scurvy had become alarming; its baneful influence was rapidly extending to every form of disease. The situation of the command had assumed a serious aspect. Most of the exciting causes still existed, while the means of relief were beyond our reach" (9).

The Commandant of the post, having been apprised from time to time of the nature and extent of the prevailing malady, and of the best means calculated to arrest its progress, organized parties under the direction of officers, and dispatched them up the river in pursuit of buffalo and other game. Unfortunately the success attending these exertions was very inconsiderable.

On February 5, 1820 a garrison order was issued to the effect that the Commissary will issue the vinegar at this post provided the Surgeons should deem it beneficial to the sick (10).

It is apparent that the belief persisted for centuries that antiscorbutic properties resided in anything that was sour. Lind had proved by his experiments of 1747 on sailors that dilute sulfuric acid or dilute vinegar had no antiscorbutic properties, but that the citrus fruits, lemons and oranges, only possessed the power to cure scurvy. Indeed as early as 1348 a document was published in which it was asserted that "one should use in all foods much vinegar, sorrel, juice of oranges and of lemons and of other acid things which are most beneficial" and of "fruits to combat pestilential maladies those are better that are rather acid, such as red berries and pomegranates" (11).

On February 6, 1820 Surgeons Mower and Gale sent the following report to Colonel W. Morgan:

Cantonment Missouri
6th Feb. 1820

Sir:

In compliance with your order we have the honor to remark that the Scorbutic habit has assumed a distinguished rank among the numerous diseases that afflict our camp. Independent of its own bane influence on the human system, it aggravates and renders more inveterate all the other diseases to which its unhappy victim is liable. It should therefore be guarded against with the utmost precaution that art can suggest or experience dictate should be used to put a period to its prevalence and its influence.

It is a Disease Occurring after subsisting on Putrescent salted animal food with a deficiency of vegetable matter. Excessive fatigue, indolence, cold and moisture, and personal uncleanliness may also be enumerated among its many exciting causes.

It is necessary that the men be compelled to air their bedding frequently and change their flannel, often washing their hands, face, feet, and even their whole bodies previous to retiring, to bathe frequently in tepid water. Wiping dry with a course cloth will be very serviceable. Rooms should be kept perfectly clean with a free admission of air guarding against cold moisture with sufficient fires.

Salted provisions should be issued seldom as possible but fresh meat and such Farinaceous substances as can be procured, be substituted.

Vinegar the invaluable part of the ration has from necessity been withheld, . . .

The salted meat lately issued has been very putrescent and under present circumstances highly deleter'ous. By divesting it of internal impurities, boiling it in changes of water with the addition of Charcoal it becomes much more palatable and wholesome. We have the Honor Sir to be your Most Obt. Servt. (12).

(Signed) T. G. Mower
Surgeon 6 Infy.
Jno Gale Surgeon
Rifle Regt.

To Col. W. Morgan, Commanding Brigade.

Due to the fact that scurvy was becoming more serious, an order was issued for parties to go on hunting trips to secure fresh food. Game, however, proved to be very scarce.

Cantonment Missouri
15th Feb. 1820

The Surgeons having reported that fresh provisions are absolutely necessary for the health of the troops, and there being no other means of procuring it except by hunting, the commandants of corps will send out such parties as they shall deem necessary for this purpose. These parties may go beyond the limits prescribed by the Department Orders but in such case they must be accompanied by a Commissioned Officer, and they must take the utmost care not to involve themselves in difficulties with the Indians. The Commandant must at the same time observe that nothing but absolute necessity would induce him to dispense with the orders of the Commandant of the Department, but the necessity of the case is so urgent that he feels no doubt but that the Commandant of the Department will approve the course he has accepted under the existing circumstances (13).

(Signed) W. Morgan, Lt. Col. R. R. Comdg.

The commanding officer, alarmed at the extent and severity of scurvy among his soldiers, decided to send the men who were most seriously ill down river to Fort Osage, situated near the present-day Kansas City, in the hope that they may secure there better food and receive better care. Accordingly the following order was issued:

Cantonment Missouri
6th March 1820

Garrison Order:

Major Ketchum with a party of men has been detached for the purpose of bringing the boats to this place, in order to transport the sick to Fort Osage. It is hoped that these boats will arrive in a day or two, and that the weather will become sufficiently moderate to permit the sick to embark. The Commandant is alive to the situation of the sick. He has done all in his power to render the situation as comfortable as practicable. It is hoped that at Fort Osage they will be provided with everything necessary to restore their health.

The Commandant has determined to send the sick below, without waiting for the orders of the Commanders of the Department. The troops will see that the Commandant is not indifferent to their situation. There is no reason for despondence. In a few days we may expect warm weather and in a very short time we will be able to procure early vegetables. In the mean time the Commandant will confine their fatigue to indispensable objects. The gates will be immediately erected and the guard reduced to the smallest possible number. The Commandant will see that all the soldiers unemployed will constantly be upon hunting excurs'ons. The vigilance and activity of officers is indispensably necessary (14).

(Signed) W. Morgan, Lt. Col.

On the 25th of March, 70 patients afflicted with scurvy belonging to the 6th Regiment were embarked on board keel boats destined for Fort Osage. Surgeon Mate Nicoll of the 6th Infantry and Surgeon Mate Malone were ordered to transport the invalids to Fort Osage (15).

In order to bolster up the morale of the sick, card playing, hitherto forbidden, was allowed, and the musicians in the band were sent to the various companies

to amuse the soldiers. The regimental order concerning the musicians was issued the eleventh of March, 1820 (16).

The sick soldiers sent down to Fort Osage had fared well, for on April 6, 1820 the following order was issued.

Cantonment Missouri
April 6th 1820

Garrison Order:

The Commandant has the satisfaction to announce to the command the progress of the sick sent to Fort Osage; they were on the 28th Ultimo 90 miles below this place, and had only lost three men, two from the Rifle Regiment, and one from the 6th Infy. The others were partly recovering and were in high spirits (17).

By order of the Lieut. Colonel Commanding
(Signed) C. Pentland, Lt. R. Regt.

After removal of the seventy men to Fort Osage, there remained nearly a hundred patients afflicted with scurvy. During the first week in April under favorable weather a large proportion of the sick were removed from the cantonment and located under tents about a distance of three miles. This new camp was called "Camp Recovery." Not a single death occurred at this place, although several patients were removed to this camp in a very moribund condition. Some of the patients had lost every tooth from its socket, and some had large portions of the lips sloughed off. No disease is more amenable than scurvy to treatment both as regards to prevention and to cure.

The recovery from scurvy was due to the fact that at the time Camp Recovery was established, wild vegetables began to shoot up among the vegetable products first discovered, and most valuable as an antiscorbutic was a very diminutive bulbous root, a wild onion no larger than a nutmeg. An old legend told to the late Dr. C. W. M. Poynter, formerly Dean of the University of Nebraska Medical College, stated that an Indian was the first to point out the wild onion (allium), which grew along the river bank, as a remedy for scurvy.

That the American Indians suffered from scurvy and were fully acquainted with a remedy for this disease may be gleaned from the experience of Jacques Cartier, the French navigator and explorer. Cartier's crew of 110 suffered from scurvy in 1536 while wintering in Canada. Twenty-five of his men died of this affliction. Those still alive were saved by the use of a concoction of the bark and leaves of an evergreen tree. This concoction an Indian had told Cartier would cure his men of scurvy.

To cite an original source: "Our Captayne considering our estate one daye went for the walking, when he saw a troupe of those countrymen coming from Stradagona among which was Doagaia who not passing tenne or twelve dayes before had been very sick with that disease. Our Capitayne seeing him whole and sound was therat marvellous glad. He asked Domagaia how he had done to heal himselfe. He answered that he had taken the juice and sappe of the leaves of a certayne tree and therewith had healed himself. Our Capitayne asked him if any were to be had thereabout desiring him to show it to him. Domagaia straight sent two women to fetch some of it whyche brought tenne or twelve branches of it and therewith showed us the way how to use it and that is thus: to take the barke and leaves of the said tree and boil it together, then to drink the saide concoction one daye and the other not, and the dregge of it to be upon his legges that is sick. The tree is in their language called Amida. Our Capitayne presently caused some of that drinke to be made, but there was non durst taste of it except one or two who ventured the drinking of it only to taste and prove it, the others seeing that did the like and presently recovered their health and were delivered of their sickness" (18).

The garrison order of March 22, 1820 issued by Lt. Col. W. Morgan is of great interest. It expresses regret at the great loss of life and portrays the hope that the coming of warm weather will improve conditions. The coming of warm weather implied abundance of fresh meat, fresh fruit, and fresh vegetables.

Cantonment Missouri
March 22, 1820

Garrison Order:

The sudden and unexpected appearance of a disease at this place which had swept away so many valuable soldiers, could not fail to excite in the bosom of the Commandant the most anxious solicitude, the most poignant grief. The troops saw that every exertion was made by their officers to prevent the expansion of the disease and to alleviate the suffering of those who have fallen under its influence. They therefore bore their suffering with a fortitude that reflects honour on the American Soldiery, and which demands the thanks and respect of the commandant of the Post. Indeed it is difficult situations which test the character not only of the soldiery but the spirit and firmness of the Officers and their devotion to the service.

The Commandant firmly believes that the present mild weather which we have reason to believe will continue will quickly stop the progress of the prevalent disease. The mild weather will no doubt soon bring forth the early wild vegetable which cannot fail to have the most salutary influence in preserving the health of the troops. It is confidently hoped that the hunters will soon find us a supply of fresh Buffalo meat, and somet me next month the commandant expects a drove of cattle at this place.

The Commandant therefore hopes the troops will not suffer themselves to be cast down; we could not guard against the disease with which we have been attacked because it was altogether unlooked for; henceforth we know our enemy and know therefore how to provide against him. Let none suppose because we have suffered the first winter after our arrival, we shall suffer in the same way in the ensuing winter. We shall hereafter be amply supplied with fresh provisions; we shall be able during the summer to cut a sufficient quantity of hay to subsist all the cattle we shall require during the winter, or if we cannot do this the cattle can be killed early in the winter, which slightly salted, answers all the purposes of fresh provision. There are soldiers at this Post who have subsisted chiefly on beef put up in this way at stations on the Mississippi in higher latitudes than that which we at present occupy, who have enjoyed perfect health and perhaps have not heard of the complaint which unfortunately exists at this place.

With respect to those troops who will probably ascend higher, they will be in a buffalo country. They will in all likelihood be furnished with horses and will be able to supply themselves amply with the meat of that animal. The past ought not to alarm us, because by making proper use of the experience we have acquired, we may easily avoid for the future the evils under which we at present suffer. Let none therefore be too soon disgusted with the service in which they are engaged. If the life of a soldier was always smooth and even, he could acquire no reputation. It is difficulties and dangers that set him in a proper point of view and display his character to the best advantage.

A portion of the sick will be sent down the river as soon as the boats can be prepared, for those who remain we have every thing to hope (19).

(Signed) W. Morgan, Lt. Col. R. R. Cmdg.

On April 4, 1820 Lt. Colonel Morgan issued the information that the Commandant had been apprised by a communication from the headquarters of the department that a drove of cattle had been purchased and would probably reach the post by the 20th of the present month, if not sooner. Boats laden with vegetables were also on the way and would probably arrive about the same time (20).

The coming of spring, the wild onions, and the arrival of fresh provisions completely arrested the onset of scurvy. No new cases of scurvy thereafter appeared. The hospitals at the cantonment and at Camp Recovery were emptied of invalids. As new troops arrived and the camp enlarged, the epidemic of scurvy was forgotten in the routine of military life. Scurvy was averted by better nutrition. Several hundred acres were farmed for food.

Fort Atkinson in its heyday was a post with several hundred soldiers, a stockade, a parade ground, barracks and stables. The post was planned as one of a string of western forts, but when Congress dropped the schemes it became the farthest outpost in our expanding country. During the seven years of the existence of this post, it served to protect the fur trade and to discourage the British from attempts at fur trapping or colonizing. It also served to impress the Indians. By 1827 Fort Atkinson had fulfilled its usefulness, since American interests were firmly established in that area. When the fort was abandoned the troops were sent down the river to Fort Leavenworth, Kansas. The camp site soon became the wilderness it was, and the fickle Missouri River has since changed its channels some miles to the east.

Of the 788 soldiers stationed at Fort Atkinson in January 1820 nearly 500 soldiers fell ill of scurvy. Of these 157 died. They lie buried beneath the sod of the abandoned post.* This outbreak of scurvy took the heaviest toll of life of any other outbreak of scurvy among our soldiers. The morbidity rate was 63.5 per cent, and the mortality rate 31.4 per cent. In the year 1820 scurvy occurred in other army cantonments. On the first of January 1820 the military strength at cantonment Missouri was 588 and at Fort Snelling, then known as St. Peter's situated at the confluence of St. Peter's and the Mississippi River, the military strength was 228, an aggregate in both posts of 1016 (21). The total number of cases of all diseases ending March 31st at both posts was 895. Of these 503 were of scorbutic character. The number of deaths was 168, of which 157 occurred at Cantonment Missouri. From the "Statistical Report on the Sickness and Mortality in the Army of the United States," published in 1840 by Thomas Lawson, Surgeon General of the United States Army, the total number of cases of scurvy for the year 1820 was given as 734 and the number of deaths as 190.

To quote again from Surgeon Mower's report: "Nearly all seemed to be reduced by protracted sickness and long continued labor. The sutler's supplies were exhausted, the fresh provisions were nearly all issued and the Hospital stores were inadequate for an emergency. In this situation, when the most nutritive diet was requisite to restore our exhausted energy, the men were compelled to subsist on salted or smoke-dried meats, without vegetables or groceries of any description. To add to our list of suffering the weather in January became excessively severe, the mercury at different periods, for several days in succession did not rise above zero and once fell to 22 degrees below that point. Under these circumstances about the 20th of January the scurvy made its appearance to which all other diseases soon yielded precedence; but it proved fatal in a few cases since February when nearly the whole regiment sank beneath its influence."

"That debility, induced by long continued sickness, was favorable to its development is manifested from the fact that those who were most debilitated from previous indisposition were first seized and numbered among its earliest victims. It may also be reasonably inferred that excessive labor and fatigue and the severity of the weather had an agency in the production of the disease, for the officers and non-commissioned officers, who experienced less of the former, and were less exposed to the latter, were exempt from the effects. One officer, who had been long confined by indisposition, formed an exception. This was the only case in which there was the least degree of convalescence observable prior to the appearance of vegetables, and this was probably affected by our being enabled to subsist him on eggs, chicken and milk—presumptive evidence that a nutritive diet produces a cure."

The anti-scurvy factor in this dietary regimen was derived from fresh chicken and unpasteurized milk.

That inclement weather and exposure *per se* do not lead to scurvy is well illustrated in this soldier's epidemic. Some of the military personnel were detailed as hunters for the purpose of procuring fresh meat. The officer, Lieutenant Durand, who commanded the detachment that wintered in a half-faced camp, some distance below the main post, subsisted his men entirely on fresh provisions from the woods. Not a single individual in this detachment of hunters experienced sickness of any description. Unfortunately game was scarce, and there was not a sufficient number of wild animals killed to supply the main camp to bring about the abatement of scurvy.

At this point it is interesting to comment that emphasis laid solely on citrus fruits as antiscorbutics had led to many a death from scurvy. It has been stated that "gold is where you find it." This traditional statement may be paraphrased: "the antiscorbutic factor is where you find it." In one place it may be found in citrus fruits; in a second place it may be found in pine needles; in a third place in wild berries; in a fourth place in green leaves and even in grass; in a fifth place, as in most of Europe, in the lowly potato; in a sixth place it may be found in fresh meat.

*The writer visited in May, 1954, Fort Calhoun the present village, which once formed the site of Fort Atkinson. Nothing remains of the military buildings, and there are no traces of an army post cemetery and no tombstones or any other designations of the presence of graves. The site of the fort is indicated by an insignificant marker.

Polar explorers there were who lost their lives dying of the scurvy because they lacked the traditional antiscorbutics, not realizing that all around them there were plenty of antiscorbutic foods in the profuse animal life typical of the polar regions, particularly of the Arctic regions.

The epidemic of scurvy among our soldiers in 1819-1820 illustrates very important facts in human nutrition. The foods that were available among the afflicted troops were deficient in dietary factors other than the anti-scurvy vitamin. Yet in a state of multiple vitamin deficiencies the symptoms that first became clinically recognizable were those of scurvy. It is therefore evident that scorbutic symptoms may be the first and most prominent ones to be recognized clinically in multiple deficiency states, when one of these total deficiencies happens to be vitamin C or ascorbic acid. Nevertheless when both thiamin and ascorbic acid are entirely absent, clinical beriberi and scurvy may develop simultaneously. The "ship-beriberi" of former days was no doubt a combination of beriberi and scurvy. When these two diseases run a concomitant course, the symptoms of beriberi appear some months before scurvy. The latter deficiency disease may take longer to develop its clinical manifestations. Darling (22) noted the pathologic affinities of beriberi and scurvy. Convoy (23) described an epidemic in which both beriberi and scurvy developed in the same individuals.

That more than one avitaminosis other than scurvy and beriberi may be present in an individual is confirmed by many investigators. Kellock (24), Majdalien (25), and Kahle (25) reported in infants cases of scurvy complicated with rickets.

Night-blindness, a symptom of vitamin A deficiency, as a complication in scurvy was first mentioned in American medical literature by Dr. Edward Coale, U. S. Navy (27), in his account of the epidemic of scurvy, which ravaged the crew of the frigate Columbia in her cruise around the world during 1838 to 1840. The vessel carried a complement of 450 men. So many men lost their ability to see after sundown that the deck-work could not be carried on without their assistance. Hicks (28) reported the prevalence of night-blindness in the Confederate Army of Northern Virginia, particularly at the occupation of Fredericksburg. The soldiers could see very well during the day, but experienced visual difficulties as darkness developed. Hays (29) likewise observed night-blindness during the Civil War of the War between the States in scorbutic soldiers in the Northern or Union troops. O'Shea (30) found in troops engaged in World War I many cases of scurvy with night-blindness as a complication.

Surgeon Mower's report of the epidemic among the soldiers cites indolence, fatigue, despondence and previous illness, salted meat, and lack of fresh food as etiologic factors in scurvy. These alleged factors together with bad air and bad water were held for several centuries responsible for an outbreak of scurvy. Today we know that neither indolence nor fatigue, nor despondence, nor previous illness, nor salted meat, nor bad air, nor bad water will cause scurvy, if the diet is richly supplied with vitamin C. Old ideas though wrong do not seem to be graciously and quickly discarded. Old ideas, no matter how erroneous they may be, die hard indeed!

The fact that the epidemic reached its peak in winter is not to be construed that scurvy is a seasonal disease. Winter in those days was a period of the year during which antiscorbutic foods became unavailable. When a deficiency of antiscorbutic foods in a diet exists scurvy is bound to arise regardless of season. Scurvy occurred in a most aggravated form on board a large portion of the American squadron blockading the coast of Mexico during the summer of 1846, and for some months disabled several of the largest and most efficient ships at a time during the Mexican War when their services were required to operate against the enemy (31).

In our own Civil War or the War Between the States scurvy prevailed to the greatest extent during the winter months; in the Crimean War, however, the greatest frequency of scurvy occurred during the

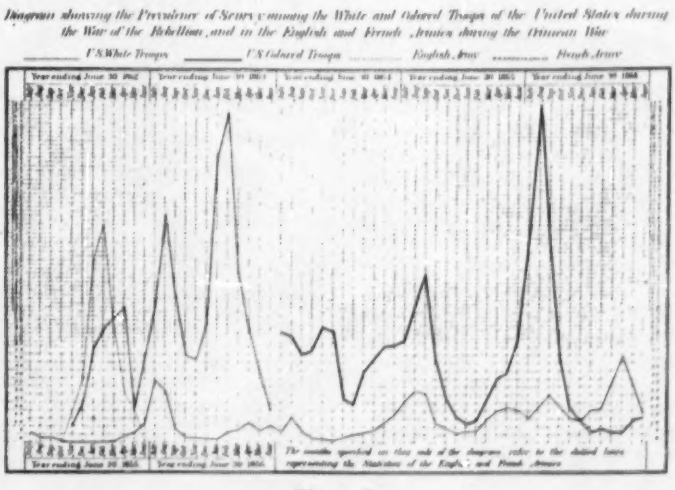

Figure 1

summer months. The accompanying graph illustrates the lack of influence of season on the occurrence of scurvy during these two wars (32). At the siege of Thorn in Germany in 1703, scurvy ravaged most severely the besieged army during the months of July and August, which proved to be the hottest months. In the cases of infantile scurvy reported, season played but a slight role. To quote from Hess: "As might be expected, it (scurvy) has been particularly prevalent in the North where vegetation is scanty—in Greenland, Alaska, Russia, and the Baltic states. It has likewise prevailed in the tropics when the crops have failed. India has been conspicuous for its large number of epidemics" (33).

In the years 1836, 1837, and 1838, 235 cases of scurvy and five deaths from this disease were reported among our soldiers. Of this number 159 cases and one death occurred in 1838. Nearly all the patients reported in that year were stationed in Florida or were soldiers that were sent into that area in campaigns against the Indians. To quote from Surgeon General Lawson's book (34): "The rations of our soldiers regarded in all its component parts no doubt disposes the system to scurvy in warm countries, and in these campaigns whenever it proved deficient in any respect, it was always to be so in reference to the vegetable portion."

That fatigue and exposure to unfavorable weather lead to a more rapid onset of scurvy when the diet is deficient in the antiscorbutic factor may be gleaned from the report of Surgeon Gale to the Surgeon General written at Council Bluffs and dated October 1, 1820: "It will not surprise you to learn that the fatigue endured in transporting loaded boats such a distance in a peculiarly laborious manner of navigating the Missouri, exposure to the medium sun, the dews of the evening and the chill of the night, were productive of diseases. Nearly every man suffered from sickness, and many experienced relapses before arriving at our point of destination; nor did we then cease to suffer from dysentery, catarrh and rheumatism."

That a bacterial invasion will convert a latent scurvy into florid scurvy with severe hemorrhagic tendencies has been noted in World War I on the eastern front in connection with typhus fever. The effect of infection upon a condition of latent scurvy has been emphasized during the Crimean War (35), and during our own Civil War or War between the States (36). Wherry in 1909 reporting experiments with guinea pigs and the plague bacillus observed that the animals fed a cereal diet developed far more hemorrhages than those receiving cabbage with their cereal diet (37).

In scurvy death may result from cardiac failure, excessive hemorrhage, or infection. There is usually present in scurvy pulmonary congestion, which may be complicated by pulmonary edema and terminal pneumonia. Baudens, writing in 1858 on the occurrence of scurvy in the Crimean War, stated that scorbutus prevailed in an epidemic form and was rarely witnessed without being associated with diarrhea, intermittent and remittent fever, bronchitis, pneumonia, and other infections. These complications proved to be the most direct cause of the mortality which scurvy produced (35). Lind as early as 1753 reported the presence of swollen and purulent axillary and mesenteric glands (38). An early writer stated that "there's few diseases at sea but what scurvy requires a share in. Preservation from this would free them (the sailors) from the danger of most diseases." Indeed an outbreak of scurvy may be overlooked in its entirety, and the diagnosis made wholly on terms of the prevailing infectious diseases, which may constitute but secondary manifestations.

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THE CAUSES AND PREVENTION OF RECURRENCES IN PEPTIC ULCER DISEASE

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IT IS commonly accepted that 46 to 93 percent of patients with peptic ulcer have a recurrence of symptoms within five years after healing (1-5). The tendency to recurrence is so pronounced that insurance underwriters place a high rating on victims of the disease. Most treatises on ulcer disease discuss the problems encountered, but as applied to actual cases the recommendations are rather nebulous (6, 7).

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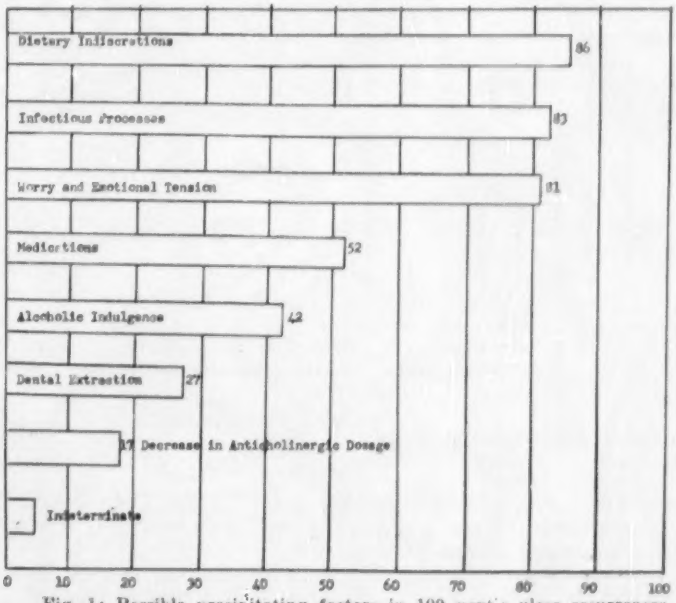

Fig. 1: Possible precipitating factors in 109 peptic ulcer recurrences. Number of times occurring.

In my office practice, patients with peptic ulcer are informed as to the recurrent nature of the disease and possible precipitating factors. Precipitating factors usually are not isolated in individuals first seen after symptoms have existed for a year or more. A patient with a recurrence after healing has once been attained, is seen earlier on this occasion if he has been educated to watch for causes and has the instruction fresh in his mind.

If relapses, such as occur in incompletely healed asymptomatic patients who prematurely abandon the prescribed diet because of the false sense that comfort means complete healing, are eliminated by radiographic confirmation of healing, and if gastric malignancies be properly diagnosed, the return of symptoms after an interval of freedom therefrom can be considered a relapse. In those few patients who have an incompletely healed ulcer crater demonstrated by x-ray but who remain asymptomatic for a long time, the return of symptoms is considered a reactivation.

INCIDENCE OF PRECIPITATING FACTORS

A study of recurrences among 109 patients during the fall, winter, and spring of 1948-49 produced surprising results. Figure 1 shows the incidence of precipitating factors. It immediately became obvious that each patient probably has more than one precipitating factor. Restudy of the individuals as to possible causes showed one to six factors operative with three or four in the majority of cases. Figure 2 summarizes this analysis. In an extension of the study over similar

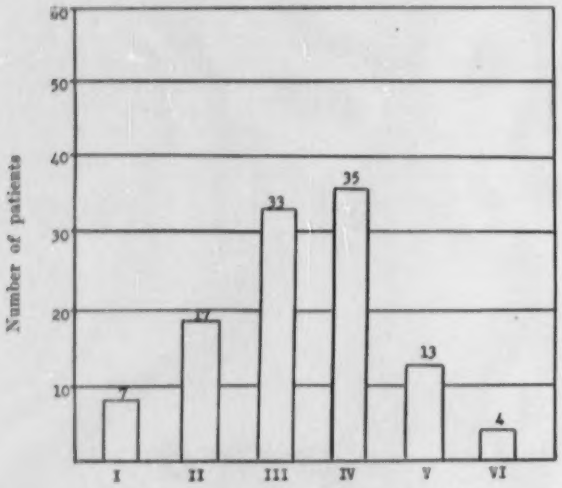

Fig. 2: Frequency of multiple precipitating factors in 109 ulcer recurrences.

periods the next two years, almost identical results were obtained.

Precipitating factors are of two kinds. Those under the control of the patient constitute 57 per cent of all causes, those not under his control or that of the physician, 43 per cent. In the first group belong alcohol, dietary indiscretions, the choice or avoidance of medications, maintenance of anticholinergic drugs, and dental extractions; in the second, major worries, progressive increase of emotional tension, infectious processes, and indeterminate causes.

MANAGEMENT OF PEPTIC ULCER PATIENTS

Following this study, each patient with a diagnosis of active gastric or duodenal peptic ulcer has been handled in a different manner. He is impressed with the fact that he has not only an active ulcer, but that the disease is prone to recur. It is stressed that nature will heal the ulcer in time dependent upon the age, scarring, depth, and diameter of the crater. Even though symptoms disappear, the assumption is not to be drawn that healing has taken place until it has been proven by x-ray. The patient is told that healing can take place because, with the assistance of certain medicines adjusted to the patient's needs, the stomach is being rested by the ingestion of frequent, small, easily digested meals and gastric juice continuously inactivated by providing bland animal protein. The patient is impressed with the fact that one or a combination of factors of sufficient intensity and duration will invariably cause a recurrence. All precipitating factors are then discussed individually and the diet subsequently altered.

DIET, CAFFEINE, ALCOHOL

Diet is discussed with patients both as a negative and positive approach. The necessity after healing has occurred of maintaining three regular meals and midmeal interval milk to avoid emptiness is emphasized. Equal emphasis is placed on the rigid *permanent* avoidance of the foods and beverages listed in Table 1. It

TABLE I.

FOODS TO BE AVOIDED BY PEPTIC ULCER PATIENTS

Alcoholic beverages	Highly seasoned food
Bacon	Mustard
Bulky or coarse vegetables or fruits as apple, peach, pear, or tomato skins, bran, whole nuts, popcorn, kernel corn on or off the cob, grape pits or skins, artichokes, dried beans.	Onions
	Pepper sauces
	Pickles
	Pork
Cabbage	Radishes
Catsup	Relish
Coffee, except with meals	Slaw
Condiments	Smoked or preserved fish or meat
Corned beef	Sour substances
Cucumbers	Tomatoes (cooked) or items containing them as meat loaf, spaghetti sauce, etc.
Drinks—very hot or cold	Vinegar
Fried foods	
Garlic	
Ham	

Limit the amount of hot cakes, hot bread, and pastry eaten. Avoid foods known not to be tolerated.

is pointed out that subsequent to healing, one pork chop or a glass of beer will apparently cause no difficulty, but that as the number and frequency of in-

discretions increase, symptoms will tend to recur. Rarely are tea and coffee excluded, usually only where there is an individual sensitivity (in less than 1 per cent of patients). They are prohibited during healing and then limited to one cup with each major protein-rich meal.

INFECTION

Major infectious processes play a material part in precipitating ulcer recurrences. Among those so disposed are acute coryza, tonsillitis, purulent sinusitis (one out of three cases); dental extractions (one out of two); viral influenza, and primary atypical pneumonia (two out of three cases).

A peptic ulcer patient with one of these affections is given a rigid routine with an immediate dietary restriction to milk every hour and the addition of antacid and anticholinergic drugs. Immediate home therapy is limited to heat, massage, gargle, topical vasoconstrictors, and steam inhalation. The patient is returned to medical supervision and the diet increased stepwise at two to three day intervals. It is emphasized that three one-week periods of such protection are preferable to one three-month period to heal a recurrence.

MEDICATION

Drugs to be avoided as likely to cause recurrence (See Table 2) are discussed by prescription name

TABLE II

ORAL MEDICATIONS THAT MAY CAUSE ULCER RECURRENCES IF TAKEN WITH REPETITION

I. Salicylate-like coal tar derivatives:
Acetanilid, acetyl salicylate, antipyrine, phenacetin, sodium salicylate.
Acetidine, Alka-Seltzer, Allerin, Anacin, Antihistamine APC, Aspergum, Axar, BC, Bismu-Kino, Bromo-Quinine, Bromo-Seltzer, Bufferin, Cal-Aspirin, Cal-Rinex, Calsa-Mist, Capudine, Casco Quinine, Citro-Mix, Coricidin, Cystex, Darol, Dolcin, Eazamine, Empirin, Felsol Powder, 4-Way, Glycoloids, Gray Pain Capsules, Guards, Haysma, Hill's Cascara Quinine, Hist-O-Plus, Imdrin, Kohler Powder, Kurb, LC Tabs, Lexoprin, Midol, Miles Antipain Pills, Norito, Parva, Pepto Bismol, Poloris Tablets, Quinlax, Rid-A-Pain, Ru-Ex, Ruminal, Sal-Fayne, Salol, Sedafen, 666 Cold Tablets, Stanback, Stark's, Tabcin, Templeton's TRC's, Thephorin-AC.

II. All oral liquid and tablet expectorants containing aminophylline, chlorides, creosol, guaiacol, iodides, turpentine, terpin hydrate.

III. Most oral soluble sulfonamides, oral mycetin as Aureomycin, Chloromycetin, and Terramycin.

IV. All cholinergic and sympathetic depressants: arecoline, Doryl, ergotoxine, muscarine, pilocarpine, Priscoline, Prostigmine.

V. Orally, or continued by injection in full therapeutic dosage: cortisone and ACTH.

and as to the reasons for taking. Over-the-counter preparations containing them are pointed out. Patients are advised to communicate this likelihood of intolerance to subsequent physicians. Some of the drugs can be used by alternate routes. There is no contraindication to their use when the gravity of the medical situation outweighs the risk of recurrence. Despite this warning, it has been found possible to treat viral influenza with terramycin with few recurrences by using 50 mg. doses administered with milk.

WORRY, INCREASED EMOTIONAL TENSION, SMOKING

A patient cannot be told not to worry or be sent to a psychiatrist to banish his worries. A patient who thinks he does not worry when there is due cause is abnormal and in need of psychiatric care. While all patients recognize the stress of major marital discord, sudden economic or civil insecurity, or death in the immediate family, they are usually so preoccupied as to forget the need to return immediately to a twenty-four-hour Lenhartz program until they again are under medical supervision. This cannot be impressed on the patient too strongly. The insidious increasing pattern of small tensions over a long period, unrecognized by the patient, causes many recurrences.

Nonsmokers are not encouraged to smoke. The chewing of tobacco is prohibited and the use of pipes and cigars discouraged. Tobacco sensitive individuals are deprived of tobacco in any form. The remainder are set a limit of 10 to 15 cigarettes a day. Any transgression serves as a sensitive barometer of increasing emotional tension. The diet is decreased stepwise proportional to the increase in cigarette consumption until the cause of mental pressure is sought out and eradicated by the patient.

MAINTENANCE OF ANTICHOLINERGIC DRUGS

The continuous use of a clinically effective anticholinergic drug is justified in the following instances: (1) hematemesis or melena within the past ten years, (2) grade 3 and 4 extragastric features on fractional gastric analysis, (3) patients over 60 without glaucoma or significant benign prostatic hypertrophy, (4) patients who have had recurrences on a reasonably moderate routine without major discrepancies, (5) continuous symptoms for eighteen months, (6) gastric hypertrophy, or dilatation, or the appearance of a tubular antrum demonstrable by x-ray, (7) the patient's working conditions requiring frequent changes in working hours and involving extreme personal responsibility.

INCIDENCE AND CONTROL OF RECURRENCES

One hundred consecutive patients who had not had the detailed instruction outlined above but healed during 1948 and 1949 were interviewed again after two years. There had been 37 recurrences among them. Another 100 patients who received the instruction outlined above during 1949 and 1950 were interviewed at the end of 1951 and in the late spring of 1952. There were 19 recurrences in this group.

Twenty recurrences in the first group and 9 in the second were caused by breaks in the factors under the patient's control. They were due to failure to remember or to believe the careful instructions previously given or to the false assumption that after a period of relief they no longer applied.

The remaining recurrences were due to factors beyond the patient's control such as infections, premedicated extractions, and major emotional conflicts.

A new anticholinergic drug, diphenmethanil methylsulfate*, was made available for clinical use in October 1951. During the past nine months, alternate similar patients with healed ulcers, facing situations like those having caused the recurrences above, were placed on 100 mg. diphenmethanil methylsulfate every six hours in addition to any previous anticholinergic agents being given during the period of exposure and immediately thereafter. Results in the patients with and without diphenmethanil methylsulfate are summarized in Table 3 and seem significant.

TABLE III

COMPARISON OF ULCER RECURRENCES IN ALTERNATE PATIENTS WITH AND WITHOUT DIPHENMETHANIL METHYLSULFATE WHO WERE RECEIVING A LIMITED DIET AS A RESULT OF CIRCUMSTANCES LIKELY TO CAUSE RECURRENCES

	Without diphenmethanil methylsulfate		With diphenmethanil methylsulfate	
Possible Causative Factor	Recurrence	No Recurrence	Recurrence	No Recurrence
Death in immediate family	3	5	0	9
Divorce or separation	4	1	0	2
Unemployment	1	1	0	1
Dental extraction	5	25	0	30
Upper respiratory infection	12	23	0	35
Influenza or primary atypical pneumonia	2	13	0	14

COMMENT

Unusual causes of peptic ulceration such as brain lesions, major burns, etc., have been omitted. The observed tendency to ulcer recurrences with or after clinical exacerbations of latent arthritis and subsequent to major atopic antigen-antibody reactions has not been included in the discussion of precipitating factors. Patients manifesting these patterns are under observation and no attempt has been made to draw conclusions.

*Supplies of diphenmethanil methylsulfate as Prantal Methylsulfate were furnished by Dr. Jeremiah Moynihan, Schering Corporation, Bloomfield, New Jersey.

SUMMARY

Peptic ulcer is a recurrent disease. Factors precipitating recurrences in a group of 100 patients have been analyzed and discussed. Recurrences cannot be prevented without the patient's understanding of the causes and an attempt to avoid them. Most recurrences are due to a combination of factors rather than to one. Patients can control 57 per cent of the factors precipitating recurrences. Only education, understanding, and cooperation will reduce the number of recurrences. Next best, but more impressive, is the unfortunate experience of making mistakes. Forty-three per cent of precipitating factors are beyond the patient's control. In addition to a more careful diet at times of exposure to the latter, use of the anticholinergic drug, diphenmethanil methylsulfate, seems further to reduce the frequency of recurrences from these causes.

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Note: This material was analyzed in a similar manner under the title of "Causas Y Profilaxis De Las Recidivas De La Ulcara Peptica" in "La Semana Medica;" LIX No. 3072, TOMO 101, No. 22, pages 703-7, 27 November 1952.

ABSTRACTS ON NUTRITION

GYÖRGY, P.: *On some aspects of protein nutrition.* Am. J. Clin. Nut., 2, 4, July-Aug. 1954.

György attempts to assess the role of protein malnutrition in the production of liver disease, referring to feeding experiments on rats, as well as to the clinical disease, kwashiorkor, also to the "starchy food dystrophy" as seen in Italy following World War II, to cirrhosis of the liver so common among African natives, and finally to the infantile cirrhosis with ascites seen in Jamaica.

The collateral problems of lipotropic intake and the influences of toxic conditions are important. There is no doubt that a diet deficient in protein tends toward liver disease, particularly when the bulk of the calories comes from cereals, and where insufficient lipotropic factors are present. The influence of the bacterial flora may be of importance in the production of cirrhosis by robbing the host of needed nutrients. Nevertheless, germ-free animals fed an autoclaved necrogenic diet developed massive liver necrosis provided their calories were restricted. Thus bacteria are not essential to the development of dietary massive necrosis. The use of orally administered antibiotics (in

animals) affects the organism not by suppression of infection or of bacterial action alone, but probably more by sparing of important food constituents.

Protein malnutrition and its clinical sequelae, including liver disease, are a serious world-wide problem, with important political implications. Clinically, prevention is much easier than cure or reversal of established protein malnutrition, e.g., cirrhosis of the liver, a disease in which the kidneys and endocrine glands, particularly the gonads, are involved in the overall disease.

WALKER, A. R. P.: *Does a low intake of calcium retard growth or conduce to stuntedness?* Am. J. Clin. Nutr., 2, 4, August 1954, 265-271.

While it is widely accepted that a low intake of calcium prejudices the rate of attainment of height and makes for ultimate stuntedness, the problem is too involved for a precise assessment of the role of calcium. Children from poor homes usually are shorter than those from "better class" homes, but there is no evidence that differences in calcium intake are responsible for this difference. Actually it has not been established that calcium *per se* is of importance in regulating height. Apart from gross undernutrition, the critical intake of calcium below which retardation of growth occurs, lies *below* the wide range of calcium contents of every-day diets consumed in various parts of the world.

WYSOCKI, A. P., MANN, G. V. AND STARE, F. J.: *The cystine and methionine content of the hair of malnourished children.* Am. J. Clin. Nut., July-Aug. 1954, 243-245.

Chemical analysis of hair samples of 33 Indonesian children with kwashiorkor failed to reveal alterations of the cystine or methionine content. It is well known that children with kwashiorkor tend to show a reddening of the hair and it was hoped that positive findings might lead to an early, convenient test for this type of malnutrition. Since the tests were negative, it is concluded that the structural change in the hair is not due to the lack of sulfur containing amino-acids.

TUI, K., KUO, N. H. AND SCHMIDT, L.: *The protein status in pulmonary tuberculosis.* Am. J. Clin. Nutr., 2, 4, Aug. 1954, 252-264.

Nitrogen equilibrium studies in a limited number of patients with advanced chronic pulmonary T.B. with weight loss and poor prognosis showed that there is, as a rule, no increased azoturia, so that the weight loss is not due to a "catabolic response" or "toxic" destruction of proteins. Weight loss is probably due to loss of appetite and is reflected by the presence of one or more changes in the body fluid compartments associated with hypoproteinemia. The use of high protein therapy is followed by a highly positive nitrogen balance and weight gain. Rapid protein replacement increases respiratory activity associated with the specific dynamic action of high protein intake. The question arises as to whether such increased respiratory activity is harmful. In the three patients thus far investigated, no ill effects were seen.

DUNLOP, D. M.: *Are diabetic degenerative complications preventable?* Brit. Med. J., Aug. 14, 1954.

Dunlop actually does not answer the question posed in the title of his article, but nevertheless shows that, in his experience, much fewer complications of a degenerative nature occur in diabetics who have been well-controlled throughout their disease than in those who have been poorly controlled.

PATWARDHAN, V. N.: *The influence of malnutrition on child growth and physical development.* Calcutta Med. J., 51, 4, April 1954, 117-129.

In a lengthy article, the author sets forth many, if not all, of the results of malnutrition on the children of India. He stresses kwashiorkor and keratomalacia as rather common findings and shows that hookworm and other infections increase the hazards of poor nutrition. Iron-deficiency and nutritional macrocytic anemia are described, the former being extremely common. The cause is simply that a poverty-stricken population cannot afford a diet sufficiently high in animal protein, protective foodstuffs and other essential nutrients. It is a sad story of partial, chronic starvation for which, at the moment, no good solution seems to be at hand. Malnutrition underlies and abets practically all other illnesses in India, a fact which the Indian physician must bear in mind.

FAWCETT, R. M.: *Observations on insulin requirement in Kimmelstiel-Wilson disease.* Journal Lancet, Sept. 1954, 337.

A case of Kimmelstiel-Wilson disease is presented, which illustrates a transition from an unusually high to a very low insulin requirement in a relatively short period of time. Diabetes, in terms of insulin requirement, ameliorates in the presence of Kimmelstiel-Wilson disease. Such cases do not, as a rule, have any serious ketosis. The basic metabolic defect accounting for this sequence of events is as yet unknown.

MIRONE, L.: *Nutrient intake and blood findings of men on a diet devoid of meat.* Am. J. Clin. Nut., 2, 4, August 1954, 246-251.

Miss Mirone for some years has been interested in a community of men subsisting on a meatless diet, the members of which work unusually long hours. It was found that prolonged use of a diet low in animal protein (10-23 gm.) had no apparent ill effect on the health of members of a community refraining from meat. The addition of skim milk to a vegetable diet raised the nutritive value of the diet to within accepted standards. The serum cholesterol and cholesterol ester levels were maintained at normal levels despite prolonged consumption of a low fat, low cholesterol diet. A diet devoid of meat and low in animal protein had no effect on the nonprotein nitrogenous fractions of the blood. While meat adds zest to meals, an adequate diet can be planned in its absence. Prolonged use of a vegetable diet which included skim milk was compatible with apparent good health. (The persons who were subject of the blood tests were not given physical or other special examinations).

ARMSTRONG, C. N. AND LLOYD, W. H.: *Severe local and general reaction to insulin zinc suspension and soluble insulin.* Brit. Med. J., Aug. 14, 1954, 396-397.

A diabetic is described, a man of 47, who became so sensitive to insulin after ten injections that blebs formed at the site of injection, and he suffered also from general malaise, nausea, anorexia and heartburn. He was given promethazine hydrochloride, 25 mg. every 6 hours for 4 days, during which time the reactions became slight. Finally, he could receive insulin without difficulty. Obviously this was an allergic reaction to some impurities in the insulin. The patient de-sensitized himself. There was no evidence of insulin resistance.

JACOBS, A. L., LEITNER, Z. A., MOORE, T. AND SHARMAN, I. M.: *Vitamin A in rheumatic fever.* J. Clin. Nutr., 2, 3, May-June 1954, 155-161.

Vitamin A in the blood was considerably reduced during the febrile stages of rheumatic fever (100 cases examined). However, equally severe reductions were found in smaller groups of patients with pneumonia, pleural effusion, rheumatoid arthritis, erythema nodosum and acute tonsillitis. During convalescence the mean body temperature first reached normal, followed by vitamin A and E. S. R. The inverse ratio between body temperature and vitamin A was not always observed in individual cases. Some very low values for vitamin A were found in specimens collected from nonfebrile patients with various diseases within 14 days of death. Vitamin A reserves in the livers of children who had died of diseases, mainly rheumatic in origin, were much lower than in children who had died by accident. No claim can be made that rheumatic fever differs from other febrile diseases in its effect on vitamin A metabolism, or that vitamin A is the only nutrient affected. Yet it should be borne in mind that prolonged rheumatic fever may cause a conditioned deficiency of vitamin A.

CUNNINGHAM, R. M. W.: *Chemical additions to food as factors contributing to disease.* Med. J. Australia, May 29, 1954, 819-822.

Cunningham reviews the chemistry of many substances used as food-coloring agents, some of which are known to have carcinogenic properties. The apparent causal relationship between the sulphonamides and acute leukemia is stressed. It is obvious that, inasmuch as many of these coloring agents, particularly those produced from aniline, phenylhydrazine, naphthols, naphthylamines and triphenylmethane, may be assumed to play at least some part in the production of disease, they should be forbidden by law. Natural coloring substances, such as porphyrins, pyrone derivatives, flavones and anthocyanins, carotenoids and some phenolic acids might well be substituted although they are reactive and would produce less permanent colorings.

EDITORIAL

THE IRRITABLE COLON

There are three chief points to keep in mind when making a diagnosis of irritable colon. First, we see in the x-ray instances of very severe spasm of the colon but without symptoms, while, on the other hand, we have some cases in which the symptoms are almost certainly arising from the colon but in which the x-ray appearances of the colon are as normal as could be desired. These facts may seem to throw some doubt upon the validity of the diagnosis, "spastic colon, or irritable colon."

Second, the most urgent duty of the physician, before making such a diagnosis is to rule out organic disease of the colon and this is never easy, and entails competent radiography and proctoscopy, as well as stool examinations.

However, when the diagnosis *must* be made, the physician should remember that the number of things that can make a patient nervous are without limit. Some people can get nervous without any abdominal distress. Others, with abdominal distress due to spastic colon, will protest that they are not nervous. These latter persons usually are harboring some sort of deep emotional upset of which they are not at all conscious.

While the majority of cases of symptom-producing spastic colon improve markedly as a result of such measures as smooth diet, sedative and belladonna, such improvement usually is very temporary, and symptoms reappear on the withdrawal of these drugs. Thus, in most cases, it is necessary to employ some form of psychotherapy. Ordinarily if, in casual conversation, the patient can be led to "ventilate," much ground is gained. The upsetting factor may be the "job," the home life, or the inability of the individual to find contentment. A grudge, a hatred, or especially a fear (which may be very ill-defined) can be responsible for the condition.

In its mildest forms, irritable colon is equivalent merely to some vague abdominal discomfort which varies from hour to hour and from week to week. In its worst forms, usually associated with the production of large amounts of mucus, the patient is completely incapacitated, and occasionally bed-ridden for years. Some of these severest cases are not responsive to any form of treatment whatever, and resemble hysteria.

Presumably the spasticity of the colon is mediated via the vagi nerves. When a person, long a victim of bowel discomfort, gets an "irritable heart" with palpitation, tachycardia and extra systoles, the abdominal symptoms frequently disappear during the cardiac phase of the neurosis, only to return when the heart has become steady again.

AMER. JOUR. DIG. DIS.

One thing that often does good in persons with spastic colon is to assure them that, unpleasant as the symptoms may be, they do not "lead to anything else." This is because a large percentage of the group have a feeling that the abdominal pain, if continued long enough, will cause cancer.

Finally, with respect to diets, there are some patients who do best when told to eat what they want.

BOOK REVIEW

The Manual of Antibiotics, Henry Welch. Medical Encyclopedia, Inc., New York, N. Y., 1954.

One single penicillin preparation has 36 trade names. The number of trade names for the same drug is limited only by the number of manufacturers. Hence, it has become impossible for the physician to remember the composition of the product from the trade name. The present volume, running to nearly 100 pages, lists all the presently commercially available antibiotic preparations, tabulated alphabetically by their generic terms along with the various trade names of each one. The book is a very valuable one for the busy doctor.

GENERAL ABSTRACTS OF CURRENT LITERATURE

Phillips, R., Karnofsky, D. A., Hamilton, L. D. and Nickson, J. J.: *Roentgen therapy of hepatic metastases.* Am. J. Roentgenol. 71, 5, 826. May 1954.

The results of treatment of hepatic metastases secondary to carcinoma of the breast, bronchus and gastrointestinal tract, are reported in 36 patients; symptomatic improvement was obtained in 26 patients. The symptomatic relief of pain, anorexia, nausea, vomiting, weakness, fatigue, sweating and abdominal distention was accompanied by reduction in the size of the enlarged liver, by gain in body weight, and by improvement in liver function as measured by determination of the serum bilirubin, alkaline phosphatase, cholesterols and proteins, and by the bromsulphalein retention test, the prothrombin time, the cephalin flocculation test and the thymol turbidity.

The method of treatment was supervoltage roentgen therapy alone in 22 cases; in 14 cases a single intravenous dose of nitrogen mustard (0.4 mg per kg body weight) was given immediately before the first roentgen treatment. The whole liver, however large, was irradiated through opposed anterior and posterior fields, and the dose ranged from 2,000 to 3,750 roentgens. The treatment time was 8-22 days. No evidence of liver damage was observed. A dose over 3,500 r carries an increasing risk to the mucous membrane of the gastrointestinal tract.

Franz J. Lust.

Wilson, F. H. H.: *Pregnancy with diabetes—the physician's viewpoint.* Med. J. Australia, July 17, 1954, 87-88.

In a short but excellent article, Wilson summarizes what is of practical importance in pregnancy with diabetes. Special care in pregnancy is needed, particularly careful control of the diabetes. Degenerative changes are hastened by pregnancy. Pre-eclampsia is more likely to occur, and death of the foetus in utero or of the child soon after birth is more likely than in normal cases. The baby, though oversized, is to be treated as a premature. Growth hormones produced by the placenta exert a profound effect. Insulin requirements usually are increased. Immediately after birth, these requirements become less, so that hypoglycemia may occur unless insulin dosage is reduced. Wilson is not sure that the use of stilbestrol and progesterone are as important as plain good diabetic management. Hydramnios, toxemia, loss of fetal movements but with persisting heart beat are indications for Cesarean section.

Moehlig, R. B.: *Pitressin tannate in oil as a hemostatic agent in gastro-intestinal bleeding.* Harper Hosp. Bull., 12, 4, July-Aug. 1954, 138-139.

Pitressin tannate in oil (P. D. Co.), usually used in diabetes insipidus because of its anti-diuretic effect, has a profound effect on gastro-intestinal bleeding, particularly bleeding peptic ulcer. Two c.c.s are given daily for a few days, the bleeding usually stopping in 2 or 3 days. It is injected intramuscularly. Initially, an aqueous solution should be injected for quick action. The drug has a prolonged vasoconstricting effect.

Truelove, S. C. and Witts, L. J.: *Cortisone in ulcerative colitis. (Preliminary report on therapeutic trial).* Brit. Med. J., Aug. 14, 1954, 375-378.

A therapeutic trial of Cortisone was made on 109 patients with ulcerative colitis, the usual dose being up to 100 mg. per day for 6 weeks. As controls, 101 patients with the disease received placebos (a "dummy preparation"). Those receiving Cortisone did better than the controls, and Cortisone seemed to be of particular value in first attacks of the disease. Sigmoidoscopically and from an x-ray standpoint, the balance was in favor of those receiving the steroid. Death, as well as necessary surgery, was more common in the control group. It is concluded merely that Cortisone exerts a beneficial influence on the outcome of an acute attack of ulcerative colitis.

Dick, A. P. and Beckett, A. G.: *Some observations on the treatment of ulcerative colitis with A.C.T.H.* Brit. Med. J., Aug. 14, 1954, 378-382.

Fourteen cases of ulcerative colitis were treated

with A.C.T.H. In seven cases the start of a complete remission coincided with the administration of A.C.T.H. In 4 cases a varying degree of maintained improvement occurred. Transient improvement of slight degree was noted in 3 cases. It is concluded that A.C.T.H. has a place in the management of certain cases of the disease, particularly acute and severe cases of fairly recent origin.

CLEVE, E. A., GIBSON, J. R. AND WEBB, W. M.: *Atypical tuberculosis of the liver with jaundice.* Ann. Int. Med., 41, 2, Aug. 1954, 251-260.

"Atypical tuberculosis of the liver" is proposed to designate exclusive or principal involvement of the liver by tuberculous infection where there are clinical manifestations of hepatic disease. The condition is rare, and 4 cases are presented. The findings are mild jaundice, low grade fever, chills, hepatomegaly and abdominal distress. Usually the diagnosis is made at laparotomy or post-mortem examination. Streptomycin success is recorded in the literature. In 2 of the present series, dramatic response to streptomycin was observed, and these 2 patients are well 7 months and 12 months after treatment. With early diagnosis and with the present anti-tuberculosis drugs, the prognosis need no longer be uniformly poor.

BIRCH, C. A.: *Primary sarcoma of the stomach,* Brit. Med. J., Aug. 14, 1954, 393-394.

A case of primary reticulum-celled sarcoma of the stomach in a man of 47 is reported. Gastrectomy was done four years after onset and the patient was alive and well 7 years later, or 11 years after symptoms began. Delay in operation was due to the fact that repeated gastroscopic examinations showed gastritis and the x-ray remained inconclusive. Finally he lost weight and developed an abdominal mass which was palpable. The chief symptom was constant epigastric pain. Foul breath was also a striking feature.

BEARD, M. F., PITNEY, W. R., SANNEMAN, E. H., SAKOL, M. J. AND MOORHEAD, H. H.: *Serum concentrations of vitamin B_{12} in acute leukemia.* Ann. Int. Med., 41, 2, Aug. 1954, 323-327.

Serum vitamin B_{12} concentrations were determined in 20 cases of acute leukemia. Eleven cases of acute lymphatic leukemia showed a normal serum concentration. Six cases of acute myelocytic leukemia showed greatly elevated serum concentration of vitamin B_{12}. In 3 cases of acute monocytic leukemia, moderate elevations were found. In vitro, normal serum will bind only from 208 to 576 micro-micro-grams per ml. of vitamin B_{12} when excess free vitamin is added. In the cases of acute myelocytic leukemia studied, the mean concentration of bound vitamin was found to be 2570 micro-micro-grams per ml. Obviously the serum protein responsible for vitamin B_{12} binding is abnormal in acute myelocytic leukemia. Such abnormal protein may be liberated into the serum by the disintegration of myeloid cells.

FRANKLIN, R. H.: *Simple conditions of the esophagus simulating cancer.* Brit. Med. J., Aug. 21, 1954, 450-51.

Stricture due to esophagitis is often misinterpreted as due to cancer, especially where esophagoscopy is contraindicated and reliance must be placed on x-ray alone. Four examples are given. In all of them the use of special diets and/or the passage of a bougie brought relief.

KIRSNER, J. B. AND PALMER, W. L.: *Ulcerative colitis: therapeutic effects of corticotropin (ACTH) and cortisone in 120 patients.* Ann. Int. Med., 41, 2, Aug. 1954, 232-250.

Corticotropin (ACTH) and cortisone do not specifically cure ulcerative colitis, prevent recurrences or replace established methods of treatment, nevertheless, when administered in sufficient quantities and with due regard for the various complications of steroid therapy as well as of the disease itself, the hormones are useful therapeutic adjuncts. Out of 120 cases treated, 3 died as a result of the use of corticotropin. In 77 percent, symptoms were effectively controlled. Ten percent were unimproved. Seven percent required surgery and 6 percent died. Glycosuria occurred in 25 of 99 patients, rounding of the face in 81, and hypertension in 35. Remissions have continued in 26 of the 94 patients in the ACTH group. Nine patients are well 2 and 3 years after treatment.

TOMBLESON, S. B.: *Diabetes mellitus and fertility.* New Zealand M. J., 53, 295, June 1954, 230-232.

101 men and 142 women with diabetes were investigated for fertility at a diabetic clinic. The investigation consisted chiefly in recording births. No evidence of loss of fertility was found in any of the female diabetics. Fetal loss was greatly increased, due to a high stillbirth and high neo-natal death rate, not to abortion. Fertility in the diabetic men seemed to be reduced.

HUGHES, E. S. R. AND KERNUTT, R. H.: *Left hemicolectomy for carcinoma of the colon.* Med. J. Australia, June 24, 1954, 120-124.

Malignant tumors of the left colon are common but the 5 year results after removal are disappointing. In many cases this is due to an operation insufficiently radical. A plea is made for the total removal of the inferior mesenteric artery with its closely related lymph nodes in selected cases of cancer of the sigmoid and descending colon and of the splenic flexure. This operation of left hemicolectomy can be done without too much shock, and the resulting bowel function is quite normal.

FISHER, A. M.: *Early operation in acute cholecystitis.* New Zealand Med. J., 53, 295, June 1954, 267-270.

For several years the author has been removing acutely inflamed gallbladders without any great technical difficulties. Immediate operation cuts short the illness, has a very low mortality rate, and may obviate gangrene, perforation and peritonitis. In those too ill for the operation, cholecystostomy is life-saving.

AIRD, I., BENTALL, H. H., MEHIGAN, J. A. AND ROBERTS, J. A. F.: *The blood groups in relation to peptic ulceration and carcinoma of colon, rectum, breast and bronchus (an association between the ABO groups and peptic ulceration). Brit.* Med. J., Aug. 7, 1954, 315-321.

Data are presented on the ABO blood-group fre-

quencies among 3011 patients with peptic ulcer, mainly those who required transfusion and/or operation, 2599 cases with cancer of the colon and rectum, 998 with cancer of the bronchus and 1017 with cancer of the breast. Compared with controls from the general population of the areas sampled, patients suffering from peptic ulcer showed an increased incidence of group O and a correspondingly lower incidence of the other 3 groups. The difference is a large one. If the series is typical, persons of group O are 35 percent more likely to develop peptic ulceration than are persons of the other groups. There is no indication of any difference in ABO frequencies between gastric and duodenal ulcer. The ABO frequencies in the cancer cases did not differ from population controls. Patients suffering from the 4 diseases do not differ significantly in the proportion who are Rhesus negative.

FRIEDMAN, J.: *Roentgen studies of the effects on the small intestine from emotional disturbance.* Am. J. Roentgen., Rad. Ther. and Nuc. Med., 72, 3, Sept. 1954, 367-379.

X-ray studies have shown that emotional disturbances produced by the interview technique can immediately alter the small intestinal mucosal pattern from normal to one of "disordered motor function." Reproduction of the presenting symptoms of the patient was not necessarily always present with the change in the small intestinal mucosal pattern. The altered small bowel mucosal pattern is not necessarily a pathological entity but may be a functional variation within normal limits.

MASTER, A. M., JAFFE, H. L. AND PORDY, L.: *Cardiac and non-cardiac chest pain: a statistical study of "diagnostic" criteria.* Ann. Int. Med., 41, 2, Aug. 1954, 315-322.

Chest pain has usually been considered cardiac in origin if, (1) it was induced by effort, (2) its location was substernal, (3) it was constricting or oppressive in type, (4) it radiated into the left shoulder or arm, (5) it was of short duration, (6) it was relieved by nitroglycerine.

Non-cardiac pain, on the other hand, was assumed to have the following characteristics—(1) it occurred at rest, (2) its location was in the left chest, (3) it was aching in quality, (4) it did not radiate, (5) it was of long duration, (6) it was not relieved by nitroglycerine.

A large number of exceptions to these rules do, however, occur (from 15 to 40 percent exceptions). There is not one of the various criteria which may not, in certain instances, be non-applicable.

However, when 3 or more of the 6 criteria are satisfied in either group, a definite diagnosis usually can be made.

LASSER, E. C. AND RIGLER, L. G.: *Observations on the structure and function of the ileocecal valve.* Radiology, 63, 2, August 1954, 176-183.

Anatomical and careful x-ray studies indicate that the ileocecal valve exercises both a sphincteric and true valvular action. The upper lip assumes a passive role in the process of closure in a distended colon, while the lower lip assumes a mobile, active role. It is not necessary to postulate incompetency of the valve when distended small bowel is seen in the presence of colonic obstruction.

HOGE, M. B. AND HOGE, A. F.: *Primary gastric resection in the treatment of perforated gastroduodenal ulcer.* J. Arkansas Med. Soc., 51, 4, Sept. 1954, 86-89.

In perforated gastric ulcers, the authors do a primary gastric resection provided the patient's general condition is good. The same operation is done for chronic gastric ulcer resistant to medical treatment. However, in the case of acute perforated duodenal ulcer, the operation of choice still is—simple closure of the perforation.

ROOT, J. C. AND GREENWALD, C. M.: *Double contrast study of the colon: routine lateral recumbent view.* Radiology, 63, 2, August 1954, 241-245.

Horizontal-beam films in the decubitus position are superior to the usual vertical-beam films in double-contrast barium enema studies. A low residue diet should be used for 48 hours prior to the examination. Routine use of the left and right decubitus views as a survey procedure is recommended. Two examples of polypoid lesions shown only on the decubitus films are presented.

DEEB, P. H. AND STILSON, W. L.: *Roentgenological manifestations of lymphosarcoma of the small bowel.* Radiology, 63, 2, August 1954, 235-240.

Lymphosarcoma occurring as a primary process in the small bowel should be considered in differential diagnosis. The x-ray appearance resembles motor dysfunction—obliteration of the mucosal pattern, stiffness of the walls, absence of peristalsis and crescentic indentations. In some cases the picture is merely that of intestinal obstruction. In 2 of 4 reported cases, there was freedom from symptoms more than seven years after radiation therapy.

DRAGSTEDT, L. R.: *The present status of vagotomy.* Illinois Med. J., 106, 3, Sept. 1954, 175-177.

In spite of the tremendous amount of controversy about vagotomy, Dragstedt continues to get excellent results in duodenal ulcer by doing a supra-diaphragmatic vagotomy and a posterior gastroenterostomy. Gastric ulcers and actively bleeding ulcers he treats by gastric resection. The beneficial effects of vagotomy are due to ablating the nervous phase of acid secretion. He leaves a suction tube in the stomach for 5 or 6 days following operation, then only gradually increases the amount of fluid and food given. By this means, stasis of the stomach is largely eliminated. The postoperative comfort and ability to gain weight are due largely to the fact that it is not necessary to sacrifice the storage function of the stomach. He is doing the operation with more enthusiasm than he did 10 years ago. He states—"if I had a duodenal ulcer myself that proved refractory to medical management, I would not have a three-fourths or seven-eighths gastric resection unless the more conservative operation failed."

KELSEY, J. R.: *Acute diseases of the liver.* Texas State J. M., 50, 9, Sept. 1954, 642-645.

Kelsey covers the subjects of viral hepatitis, bacterial infections, spirochetal diseases (e.g. Weil's disease), parasitic infestations (e.g. amoebiasis), toxic agents, and vascular catastrophes (e.g. infarct). The general treatment outlined is rest in bed and a normal diet, although occasionally extra vitamins may be needed. Antibiotics are of value in suppurative hepatitis. About 90 percent of persons developing hepatic coma (liver failure) die in spite of treatment. Transfusions, the use of oxygen, the giving of potassium in certain cases with hypokalemia, and glutamic acid are recommended.

BONFILS, S., RICHIR, CL., AND CARON, H.: *The aspect today of early cancer of the liver with report of 7 observations.* Arch. Mal. App. Dig. 1954-43, pp. 805-818.

The authors report and analyze 7 observations of early cancer of the liver. The subjects are white males whose age is comprised between 50 and 70 years.

The essential symptom, often of very early appearance, is abdominal pain which was observed in six cases out of seven.

Variable in kind, it gave rise to very different diagnoses: acute pneumopathy, abscess of the liver, appendicitis, subocclusion.

Among other early signs, loss of appetite and icterus should be noted. On the other hand, edema, ascitis, digestive hemorrhages, great loss of weight, are habitually late to appear.

Functional hepatic tests are often notably disturbed: Serum-albumen (88%) Brom-Sulfone-Phthalein (82%) Prothrombin (63%) MacLaglan (54%).

A white cell count above 12,000 is to be observed in 50% of the cases.

Medical literature today confirms these facts and shows that, in Europe, the frequency of early cancer of the liver is far greater than is usually said: it represents: 2%° of global mortality and from 0.5 to 2% of forms of cancer generally. For purposes of the Hepatic Cancer and Sclerosis Association, the following points should be emphasized:

1) The two conditions are very generally associated (58 to 100% of cases) and the frequency of their association is on the increase;

2) This association is modified by the clinical or biological signs of the disease. However, in all cases where cancer was not accompanied by a notable hepatomegaly, an important sclerosis of the gland was present;

3) Cases where the appearance of cancer is preceded by a protracted clinical cirrhosis are rare.

The present work is above all clinical and biological. The anatomical documents will be exhibited in a second article.

Guy Albot.

COURTY, L., LANGERON, P. AND BARBRY, A.: *Bile peritonitis particularly in lithiasis.* Archives des Maladies de l'Appareil Digestif—Tome 43 No. 6, Juin 1954.

Bile péritonitis is a classic but fairly rare complication of lithiasis i.e. in the sense of bile outflow from the bile ducts inside or outside the liver. Five out of seven recent cases observed showed a bile lithiasis.

The seat of the lésion is most often vesicular (80% of cases); the perforation is sometimes difficult to bring to light as a perforation of the rear wall of the main bile duct, once observed by us.

Whatever the aspect and seat of the lesions, the clinical picture is usually that of acute peritonitis of the type "by perforation." Perforation in two stages may also be observed; latent forms (especially in old persons) and chambered forms. Finally, it does not seem as if B.P. without perforation manifests itself by a clinical picture different from that of a B.P. by perforation.

If it is a case of illness already recognized as lithiasic, the diagnosis will be established essentially with acute hemorragic pancreatitis and bile ileus, classic complications of lithiasis. Frequently the danger lies in not appreciating the peritoneal complications during a painful syndrome such as acute cholecystitis: indeed the peritoneal signs may in this case follow unnoticed upon the signs already recognized. In the absence of previous lithiasic trouble, the diagnosis will first be that of acute appendicitis. Therefore it is frequently a difficult diagnosis.

The source of these perforations is certainly not single: a mechanical factor of distension of which one of our observations is very characteristic—an infection factor—a vascular factor appearing in particular to account for certain duct perforations—and finally a diastasic factor showing the drawing of pancreatic flow into the bile ducts, put forward especially for B.P. without perforation, have been all suggested. In the last analysis, it is likely that these various factors often interfere simultaneously and the study of our cases and of the literature thereon has led us to emphasize the part played by the bile stagnation that can generally be brought to light in most B.P.

Treatment, clearly surgical, varies according to the case. In vesicular perforation, there are three possibilities: simple draining, cholecystectomy, cholecystostomy; the two last seem the most satisfactory and the decision will finally depend on the nature of the lesions and the main bile duct, draining thereof will most often be indicated. B.P. without perforation sets a difficult therapeutic problem: cholecystectomy is often the logical answer, but the simple cholecystostomy presents a better future, finally draining the hepatic duct together with cholecystectomy may be valuable.

Our own results are as follows:

VESICULAR PERFORATIONS: 3 cases—2 cholecystectomies; 1 cholecystostomy; 3 cures on operation.

HEPATIC DUCT PERFORATIONS: 2 cases—2 near by drainings; 1 cure; 1 death (very late operation).

B.P. WITHOUT PERFORATION: 2 cases—1 cholecystostomy; 1 death; the second case, very lately operated on, allowed us to find on examination of the vesicle a complete desquamation of the mucus membrane; this particular lesion, associated with excess bile pressure, seems to have been decisive in the development of bile transudation.

Guy Albot.

KINSELLA, V. J.: *The neglect of the gastro-duodenal mucosa by clinicians and radiologists.* Med. J. Australia, Sept. 25, 1954, 511.

Kinsella frankly admits that fluoroscopy alone is not a good way to study the mucosa of the stomach and duodenum. He insists on films and spot films and likes to use mucosa-relief studies with a partially filled stomach. He emphasizes that the mucosa is a living, sensitive tissue in an ever-changing state of reaction to foods, chemicals and emotions. Distension of the stomach with barium or with effervescent drinks may easily blot out the rugae (ghost forms). By careful radiological study much may be contributed in cases of gastritis.

HORNSBY, A. T. AND BAYLIN, C. J.: *Sprue vs. pancreatogenic steatorrhea.* Radiology, 63, 4, Oct. 1954, 491.

The small bowel pattern in active sprue, as a group, differs from that in pancreatogenous steatorrhea. With certain reservations, these differences may be used in the individual cases as an aid in differentiating sprue from pancreatogenous steatorrhea. As a general axiom, the closer the small bowel pattern approaches the normal, the more likely it is that the steatorrhea is of pancreatogenous origin. In sprue the segmentation and moulage sign is usually striking. In steatorrhea of pancreatic origin this is not present although coarse folds are the rule.

PASCUAL, E. O.: *Acute thrombosis of the trunk of the portal vein and its branches.* Revista Española de las Enfermedades del Aparato Digestivo Y de la Nutricion. Vol. 13, No. 4, Jul.-Aug., 1954, pp. 353-378.

A better morphological and functional examination of Banti's syndrome and of cirrhosis of the liver enabled the writer to prove, together with a great incidence of thrombosis in this region, the absence of a characteristic symptomatology or even the latency of the thrombotic syndrome. This is not a terminal or at least a very advanced syndrome in the greater part of the cirrhoses of the liver.

From the analysis of the 15 cases reported by the writer it becomes apparent that the portal hypertension syndrome does not account for the pathogenesis of many porto-splenic thromboses nor is the concept of "congestive splenomegaly" sufficient to explain the facts recorded. Many patients with porto-splenic thrombosis exhibit no esophageal varices; gastro-intestinal congestion and the presence of ulcers of the stomach or bowel, are not more frequent in them; they have no ascites abdominal pain or fever. It is, therefore, to be concluded that there are two clinical forms of portal thrombosis.

1. The classic form, with hypertension and portal stasis, which would be the less frequent.

2. The clinical form without portal hypertension, which is characterized by the simultaneous presence of diffuse angiopathy, splanchnic and peripheral, and in addition by the presence of purpura and disturbances of the platelet system, often of immunological nature (an actual *immunopancytopoenia* in some patients) alternating with a greater tendency to hypercoagulability.

In some cases of thrombosis, cirrhosis of the liver may be in an early stage, but splenomegaly has then reached advanced stages and the spleen exhibits mixed arterial, venous and capillary lesions, as is shown by histologic study and portography by intrasplenic route.

The most important aetiologic factors in both clinical forms of portal thrombosis are infections, particularly those due to ultraviruses haemotropic and hepatotropic; and in addition, malnutrition becomes important in the aetiopathogenesis as proved by those cases lacking in the complex B.12-folic acid-folinic acid in which the immunologic and haemolytic activity may be cured with appropriate vitamin therapy.

Porto-caval or spleno-renal shunts are the treatment of choice in the clinical form associated with portal hypertension. On the contrary the second clinical form of the thrombotic syndrome with purpuras and splenomegaly benefits by splenectomy as may be seen in more than half the cases. The therapeutical prospects are extremely encouraging in this operation when the thrombosis is associated with dwarfism of the pituitary-gonadal type.

Heparin and the anticoagulants of the Dicumarol group should be used in the thrombotic syndrome as soon as blood platelets start rising even if vestiges of purpura are present.

Treatment with ACTH and cortisone may prove useful in cases with prevalence of manifestations of immunopancytopoenia. Contrary to the opinion of various writers the increase in the production of thrombi was not seen by Professor Oliver in this treatment.

BUENO, C. G.: *On the surgical dumping syndrome.* (Same Journal as above, pp. 394-400).

The surgical dumping syndrome rarely occurred in patients operated upon by the writer. The number of cases operated was, however, very high.

The main causes are:—

a) Election of surgical procedure and its technical details.

b) Inadequate diet shortly after the operation or in the months following it.

It is apparent that in some psychopathic patients their mental state contributes to the development of the syndrome.

The writer has no experience, owing to the rarity of occurrence of the syndrome in the patients operated upon by him, as to the best surgical indication for its treatment.

VALLEJO, E. A.: *Giant ulcers of stomach and duodenum. Symptoms and signs of chronic perforation.* (Same Journal as above, pp. 403-404).

The writer describes the signs and symptoms of chronic perforation, penetrating and covered, of peptic ulcer of stomach and duodenum. He makes some comments on its incidence, pathogenesis, morphology and treatment. Diagnosis is generally based on the clinical history, particularly on the characteristics of pain, its continuity, its radiation and postural changes. Other points should also be weighed: presence of fever, in-

crease in erythrocyte sedimentation rate and laboratory data indicating irritability of the pancreas, particularly hyper-amylasaemia and hyper-lipasaemia. Roentgenologic diagnosis is possible in a great number of cases, but not in all. Treatment is fundamentally surgical.

He goes on to describe seven personal cases of this complication of peptic ulcer. The first three cases showed an agreement between symptoms and roentogenographs. Two served to prove the difficulties in roentgenologic diagnosis in some cases. The last two, one of them a triple peptic ulcer, revealed the possibility of medical management of these penetrating chronically perforated ulcers.

BAYO, J. V.: *Gastric disease in tabes dorsalis.* (Same Journal as above, Vol. 13, No. 5, pp. 521-531, Sept.-Oct., 1954).

The writer reports four cases of tabes dorsalis. The first suffered only from attacks of vomiting, without pain, two others from painful paroxysms, one of which coincided in case three with intra-raquidean injection of mercurialised serum; cases four and five exhibited ulcers in the lesser curvature of the stomach.

In a case of tabes with painful paroxysms in the abdomen a roentgenologic examination of the digestive tract should always be carried out in view of the relative frequency of peptic ulcer in this disease of the nervous system.

FROEHLICH, A. L. AND BUYSSENS, N.: *The pathogenesis of primary biliary cirrhosis.* (Same Journal as above, Vol. 13, No. 5, pp. 485-491, Sept.-Oct., 1954).

Primary biliary cirrhosis is a syndrome characterized by jaundice induced by the presence of an obstacle in the intrahepatic biliary ducts. Its aetiology is not the same in all cases. It is necessary to admit that an infection of the biliary ducts spread to the liver by venous route may be present.

WINKELSTEIN, ASHER, WOLF, BERNARD S., SOM, MAX L., AND MARSHAK, RICHARD H.: *Peptic Esophagitis with Duodenal or Gastric Ulcer.* J.A.M.A., Vol. 154, No. 11, p. 885. 1954.

In 20 patients with peptic esophagitis 15 lesions were associated with simultaneous duodenal ulcer; 2 were associated with gastric ulcer. In one patient a gastric ulcer developed, and in one a duodenal ulcer developed. One case followed a previous peptic ulcer of the esophagus. The gastric acidity was high in 17 of the 20 patients. Transcardial reflux was noted in only two patients. The most prominent symptoms were dysphagia, heartburn, regurgitation, substernal pain, and loss of weight. The duration of the condition varied: 1 to 8 months in 10 cases; 1 to 4 years in 7 cases; and 4 to 10 years in 3 cases. Peptic esophagitis is chiefly a disease of elderly men (19 men, 1 woman); 11 patients were over 60 years of age and 8 ranged from 40 to 60 years of age. The course is relatively benign in most cases. There was one death due to perforation into the mediastinum. One patient died of a coronary thrombosis after three years of freedom from esophagitis. The chief complications were stenosis and hemorrhage. There was one perforation. Six hernias, five of which were small traction hernias, were noted.

The therapy usually consisted of medical treatment (the usual antiulcer or milk-soda drip therapy) and mechanical dilatations. Treatment was surgical in some cases. There were no esophageal resections in our series. Surgical therapy was not as successful as medical therapy plus bouginage. Partial esophageal resection plus resection of the proximal half of the stomach with vagotomy plus esophagogastrostomy seems to be the surgical procedure of choice. Four patients had had previous gastric operations. The cause seems to be the regurgitation of acid and pepsin into a lower esophagus with a susceptible mucosa. Ectopic gastric secretory tissue was not found in this series. This condition is important not only as a disease entity but also in the differential diagnosis from carcinoma of the lower end of the esophagus.

Franz J. Lust

HOFFMANN, KARL F. AND CHILKO, ALEXANDER J.: *Subcostosternal diaphragmatic hernia.* Ann. Int. Med. 41, 3. 617. Sept. 1954.

The definition, symptoms and diagnosis of subcostosternal diaphragmatic hernia are discussed. The common errors in the diagnosis of this condition are emphasized, and a case previously diagnosed as "heart disease" is reported. Indications for surgical treatment are presented. For cases without imperative reasons for surgery, the usually accepted measures are mentioned, and a more active medical regime is proposed for treatment of suitable patients who refuse surgical treatment.

Franz J. Lust

COLEMAN, FREDERICK S., MARKS, JEROME A. AND SUIDAN, ANDREW: *Use of cortisone in fulminating serum hepatitis.* New York State J. Med. 54, 17, 2489. Sept. 1, 1954.

A case of fulminating viral hepatitis is presented in which the prognosis appeared very grave and in which the use of cortisone apparently effected an immediate and favorable response. Several theories on the mode of action of cortisone and ACTH are discussed.

Franz J. Lust

SCANLAN, R. L. AND YOUNG, B. R.: *Roentgen diagnosis of gallbladder and biliary tract disease without cholecystography.* Am. J. Roentgen. 72, 639. Oct. 1954.

Conventional roentgenograms without the aid of cholecystography often reveal valuable information concerning gallbladder and biliary tract disease. The arrangement and range of movement of stones may be the only indication of a distended gallbladder or duct calculi. An enlarged gallbladder indicating cholecystic or ampullary disease may be of sufficient opacity for detection and the inferior margin is frequently outlined by contiguous gas-filled loops of intestine. Air in the biliary tract indicates abnormal communication with the intestinal tract or infection with gas-forming organisms. Prone, supine and lateral decubitus views have been an invaluable combination far superior to any single projection in the roentgen diagnosis of gallbladder and biliary tract disease without cholecystography.

Franz J. Lust

GOTTLIEB, CHARLES, LEFFERTS, DAVID AND BERANBAUM, SAMUEL: *Gastric volvulus. Part I.* Am. J. Roentgen. 72, 609. Oct. 1954.

Volvulus may result secondarily to an intrinsic lesion of the stomach or to an extrinsic lesion in the neighboring organs. Most cases of total organo-axial volvulus are not associated with intrinsic pathology of the stomach. At times no cause can be demonstrated (idiopathic volvulus). Of the extrinsic factors responsible for total volvulus, an abnormally long gastrohepatic or gastrocolic omentum, or both, probably of organic origin, seems the most important. The relationship of diaphragmatic hernia to volvulus is often mentioned. Its causal relationship is not clear, except in individual cases where there is a lengthening of the mesentery. "Aerocoly," or distention of the colon with gas, has also been suggested as an etiological factor. This is in itself not the prime, but merely a predisposing factor. The condition of the hepatodiaphragmatic interposition, however, does have a relationship. In this condition, the transverse colon or splenic flexure rolls upward and forward, and the greater curvature is then pulled up by the gastrocolic omentum. The study of the authors fills a very needed gap in the study of gastric volvulus.

Franz J. Lust

LEFFERTS, DAVID, BERANBAUM, S., GOTTLIEB, CH.: *Gastric volvulus. Part II. Idiopathic gastric volvulus.* Am. J. Roentgen. 72, 616. Oct. 1954.

Gastric volvulus may be present without symptoms or may produce intermittent mild or acute upper abdominal distress, depending on the degree of rotation. Borchardt and Lenormant's triad consisting of strong efforts to vomit without result, circumscribed epigastric pain, and impossibility of passing a stomach tube are well known. Toygar prefers to have the patient swallow barium instead of passing a sound, in view of the danger of perforation. Volvulus up to 180 degrees may be present without obstruction or strangulation of blood supply and may undergo spontaneous resolution. Beyond rotation of 180 degrees the patient presents an acute abdomen with signs of complete obstruction, and the possibility of continuing strangulation. At this point death may occur if the volvulus is unreduced surgically.

Franz J. Lust

BERANBAUM, S. L., GOTTLIEB, CH., AND LEFFERTS, D.: *Gastric volvulus. Part III. Secondary gastric volvulus.* Am. J. Roentgen. 72, 625. Oct. 1954.

Gastric volvulus is, in the experience of Beranbaum, Gottlieb and Lefferts more frequent than is generally recognized. In all cases of acute conditions of the abdomen where a definite diagnosis cannot be made, volvulus should be considered, especially when the Borchardt, Lenormant's triad of symptoms is present. Organo-axial volvulus is much more frequent than mesentero-axial volvulus. In the twenty cases presented, there are only three cases of mesentero-axial volvulus, all idiopathic in type. The differential diagnosis between these two types of volvulus and cascade stomach is briefly illustrated and discussed. The etiological relationship of the colon should always be investigated in all cases of volvulus. The transverse colon is high in the epigastrium closely related to the stomach. Two of the cases show the presence of hepatodiaphragmatic interposition of the colon. In this series the supracolic type of volvulus is more prevalent, the infracolic type is rare. This series presents four infracolic types of volvulus, two of them with hepatodiaphragmatic interposition.

Franz J. Lust

FELSON, BENJAMIN: *Translumbar arteriography in intrinsic disease of the abdominal aorta and its branches.* Am. J. Roentgen. 72, 4, 579. Oct. '54.

The literature on translumbar arteriography offers convincing evidence that the abdominal aorta and its branches can be visualized consistently and with reasonable safety, often yielding important information obtainable in no other manner. This is supported by personal experience with a large series of cases. Even when other methods result in a correct diagnosis of the vascular condition, arteriography may afford additional information. Translumbar arteriography is of value in the diagnosis and treatment of thrombosis and aneurysm of the aorta and iliac arteries, arteriovenous fistula, and in renal infarction. It is seldom indicated in calcified aneurysm of the renal or splenic artery, thrombotic occlusion of the main renal artery, a saddle embolism of the aorta, and hypertension.

Franz J. Lust

RIGLER, L. G. AND OLFELT, P. C.: *Abdominal aortography for the roentgen demonstration of the liver and spleen.* Am. J. Roentgen. 72, 586. Oct., 1954.

A procedure for the roentgen visualization of the liver and spleen by means of introduction of a contrast medium through the abdominal aorta is described. A rapid exposure technique with multiple films will permit reasonably adequate demonstration of the size, shape, position and internal structure of the liver and spleen. The hepatic and splenic arteries and the portal venous circulation are sufficiently well demonstrated, so that diseases of these structures can be elucidated. Diseases of the liver, itself, especially cirrhosis and metastases from tumors are usually well delineated. Until a contrast medium which is harmless can be introduced into the liver by the oral or intravenous route, the pathway through the abdominal aorta may be the method of choice.

Franz J. Lust

ADLERSBERG, DAVID, MARSHAK, RICHARD D., COLCHER, HENRY, DRACHMAN, STANLEY D., FRIEDMAN, A. I., AND WANG, CHUN-I: *The roentgenological appearance of the small intestine in sprue.* Gastroenterology 26, 4, 548-578. April, 1954.

Forty patients with sprue have been studied clinically and roentgenologically over a period of 1-17 years. The chief symptoms and signs included steatorrhea, weight loss, anemia, oral lesions, hypocalcemia, hypoproteinemia, flat vitamin A and glucose tolerance curves and normal pancreatic enzyme studies. These patients were observed roentgenologically prior to and following treatment in the hospital, though the vast majority had received some form of anti-anemic therapy before coming under control of the authors. Three patients re-

vealed a normal small bowel pattern. The remainder exhibited two distinctive patterns. The first and most characteristic was observed in 70% of the patients in this series and consisted of dilatation most prominent in the mid- and distal jejunum, segmentation, seen as large barium-filled loops of ileum best visualized during the evacuation of the barium meal, thickening of the mucosal folds and the presence of hypersecretion. While each of these features might occur in a wide variety of disorders their combination, localization and intensity are more frequent in and much more characteristic of sprue. In the second pattern, segmentation is marked, early and persistent and present throughout the small bowel, secretions are pronounced and dilatation is slight to moderate. This latter pattern occurred in only 10% of the patients in this series. It is also observed on occasion in those conditions and diseases that simulate sprue, namely nephrosis, hyperthyroidism, cirrhosis, pancreatic steatorrhea, pellagra and other deficiency states and therefore, is being referred to as the sprue-like pattern.

Differential diagnosis must also include organic diseases of the small bowel including lymphosarcoma, ileojejunitis, tuberculosis, amyloidosis and scleroderma. Roentgen evidence of improvement in the sprue pattern was significant in two patients following steroid therapy and in four patients who have been treated for many years with anti-anemic therapy. Nevertheless, in most patients there exists a marked discrepancy between the degree of clinical improvement and the roentgen changes reflecting that improvement. The "sprue pattern" is sufficiently distinctive roentgenologically to separate it from the heterogeneous group of conditions heretofore labeled with the roentgen diagnosis of 'irritation pattern," "enteropathy in deficiency states," "deficiency pattern" or "disordered motor function."

Franz J. Lust

CROHN, BURRILL B. AND JANOWITZ, HENRY D.: *Reflections on regional ileitis, twenty years later.* J.A.M.A., 156, 13, 1221. November, 1954.

The cumulative experience of the last 20 or more years has justified the classification of regional ileitis as a pathological and clinical entity. The most important expansion of the concept of this disease has been the recognition that granulomatous cicatrizing lesions may be found in all areas of the small intestine. Although the cause of the disease remains unknown, the characteristic pathological process, especially the local lymphatic involvement, has been clearly established. The clinical relationship of regional ileitis or enteritis to chronic ulcerative colitis in the combined form of the disease remains puzzling. In the absence of specific therapy, all currently employed measures, including the use of corticotropin and cortisone are simply supportive. The high rate of recurrences of ileitis following the short-circuiting or the resection type of operation is leading to a reevaluation of the criteria for operation. The current trend of thinking is to defer operation until the pathological process appears to be quiescent and to restrict surgery to the complications of the disease, namely, obstruction and fistulization.

Franz J. Lust

IMBERT, R.: *Practical method of detecting biliary dyskinesias by means of cholecystographic tubage.* Archives des maladies de l'appareil digestif. No. 9-10, 1954.

Following four years experimentation and more than 150 tests, the author puts forward the Cholecystographic tubage of V. Fúentes as the method most suitable for the detection of biliary dyskinesias.

The interpretation of the X-Ray pictures collected during the emptying of the biliary tract makes it possible to control the data of duodenal tubage and to rectify the mistakes in interpretation to which it is subjected and which have wrongly cast doubt on its semeiotic value.

The standardization which can be perfectly applied to a minuted test whose physiological norms are known, has made it possible for the author to make this test easy to carry out, and to facilitate the comparison of the results thus obtained with normal results, and the comparison of abnormal results among themselves.

The information obtained by comparing the graph of the biliary evacuation with the Cholecystographic pictures makes it possible in each case to state the anomalies exactly.

The test is possible during an attack, when it is a question of minor attacks only, and not of sharp hepatic colic attacks.

The technique of the minuted duodenal tubage and the preparing of the graph follow the principles laid down by V. Fúentes and his collaborators.

The cholecystographic pictures during the evacuation, the shapes and volumes which they represent, are interpreted in the light of the most recent data and are obtained in the time, following an unchanging rhythm exactly determined by this technique:

Technique: The patient, with gallbladder opacified and tube in position in the 2nd duodenum, is placed on the X-Ray table in a right lateral decubitus position, an angle which makes it possible to render visible the profile of the gallbladder, of the cystic, of the choledochus, at the time of the biliary evacuation. The injection of 20 cc of olive oil into the duodenum is the standing point of the test.

While the bile is flowing, and the Oddi-closed-time, the flowing-time of the bile A, the gallbladder-time, are being recorded on the graph, photos are taken at the 5, 10, and at 15 minutes. When at the 15 minute test no bile has appeared at the tube, the classic Novocaïne-test is made, and at 17 minutes photo is taken, meant to show the modifications in the behaviour of the biliary tract brought about by the duodenal anaesthesia.

At 30 minutes, another photo. If the bile has not appeared, the classic amyl nitrite test is given, and at 32 minutes a photo is taken also meant to show the modifications in the behaviour of the biliary tract brought about by the spasmolytic effect of the product.

The patient can then leave the X-Ray table, which is an interesting point of method, and not return to it until the 90 or 120 minute test so that the maximum evacuation of the gallbladder may be appreciated.

AMER. JOUR. DIG. DIS.

The most characteristic syndromes; Isolated Hypertonia of the Cystic, Organic Blockage of the Cystic, Pure Oddian Hypertonia, Gallbladder Atonia, are determined by clear differential signs.

The associated reflex hypertonia Oddi-Cystic is discussed. The essential discrimination of the dyskinesias of the accessory tract and of the principal tract is, for the author, a minimum almost always obtained with the help of the method.

One of the most serious causes of error concerning the Oddi-closed-time, or the intermittences of the flow during the gallbladder-time, and which may depend on the terminal olive being too far from the Vater papilla, or which again may depend on the spasmodic duodenal factor which segments the duodenum through isolating the olive from the quantity of bile, having issued normally however from the papilla—is neutralised by the use of a tube furnished with a second perforated olive placed on the circuit a few centimeters before the terminal olive.

The brevity of the test makes its current use possible in specialized practice.

LEGER, L.: *Splenic repercussion of pancreatic diseases.* La Presse Médicale, 28 April 1954, 62:31, p. 666.

The closeness of anatomic relations between the splenic vein and the pancreatic body explains why the affections of this gland influence this satellite vessel and the spleen. The splenoportography makes it possible to show the morphological repercussion and explains some functional implications—splenomegaly, hemorrhages—to which one has not paid much attention up to now.

A first series refers to carcinoma of the pancreas with posterior extension inducing a compression or thrombosis of the splenic vein and the splenomegaly might sometimes by error be considered as primary.

In a second series, portal hypertension located in the spleno-mesaraïc bed is produced by a lesion of the pancreatic body which can be followed by a hemorrhage of the digestive tract.

Though being well known, those facts were not well explained. The splenoportography makes it possible to give the necessary pathogenetic explanation and the routine practice of that exploration in digestive hemorrhages seems to be extremely instructive.

Finally, there are some clinical pictures of Banti's syndrome type which can be explained primarily by a pancreatic lesion.

The splenoportography gives the possibility of a better appreciation of the operability of the pancreatic tumors leading either to abandonment of the operation or, on the contrary, to extend it to the resection of the portal vein which, as we know now, is possible.

ALBOT, G. AND BONNET, G. F.: *The future of patients cholecystectomized for dyskinesia of the gallbladder.* (Archives des Maladies de l'Appareil Digestif. T. 43, July 1954, p. 785-798).

This paper is based on the complete study of 27 patients by different surgeons before, during and after operations for hypertonic vascular dyskinesia. In every case the dyskinesia was accompanied by inflammatory anatomical lesions (cystitis, diffuse cholecystitis, pericystitis) or dysplasic lesions (adenofibromatosis of the Lyschka type, strawberry gall-bladder), or fibrous lesions of uncertain origin. There was no connection between the histological lesions and pre- and post-operatory symptoms.

The delayed action results obtained after cholecystectomy are frankly mediocre: in only 20% of the cases did painful hepato-biliary attacks disappear. In the other patients after several months of post-operatory relief, pains in the right hypochondrium reappeared.

Two factors seem to play an essential part: migraines and the psychic condition of the patients. In no case were the migraines and their attendant bilious attacks modified by the operation. The mental background of the patients suffering from dyskinesia, made up of passivity, anxiety and hypochondria is aggravated by the operation, in particular in the case of sufferers from migraine. The only good results were observed in those patients whose psychism was sound.

Finally, gastro-intestinal syndromes existing before the operation and often independent of the biliary trouble (gastritis, gastro-duodenal ulcus, dolichocolon, fermenting colitis, spasmodic colitis) occupy an important place in the disorders found in these patients. One should therefore be extremely cautious before subjecting a patient suffering from vesicular dyskinesia to cholecystectomy, even when it is accompanied by infundibulo-cystic lesions proved by cholecystography, duodenal tubage and biliary radiomanometry.

Patients suffering from migraine or presenting characteristic anomalies have little chance of relief. Without as yet being able to prescribe a precise line of therapy, it seems clear that cholecystectomy does not prove, in the majority of cases, to be a satisfactory treatment for biliary dyskinesia.

THERAPEUTIC NOTES, MEDICAL JOURNAL, CELEBRATES 60TH ANNIVERSARY

Passing another milestone is the medical journal, Therapeutic Notes, which this year celebrates its 60th anniversary. Begun in 1894, the "parent edition" of this journal is sent by Parke, Davis & Company to approximately 175,000 physicians and allied professional people. Five other editions are published—British, Australian, Spanish, French and Portuguese—to give a world-wide circulation of 500,000 in every country outside the Iron Curtain. Originally printed in hand-bill style with large blocks of black type, Therapeutic Notes now is run off in four-colors with eye-appealing layout.

THE THIRD ARGENTINA CONGRESS ON GASTRO-ENTEROLOGY

The Organizing Committee in charge of the above mentioned Congress, presided over by Professor Alberto L. C. Maggi, has established that the same will take place in the City of Córdoba (Argentine Republic).

The main subjects to be discussed are as follows: "Hepato-biliary Functional Exploration" and "Study and Treatment of Amebiasis," as well as two Symposiums on "Diagnosis and Treatment of Tumors of Duodenum Pancreas" and "Digestive Hemorrhages."

All additional information regarding the Congress will be supplied by the Secretariat of the Argentina Society of Gastroenterology—Santa Fé 1171, Buenos Aires, Argentine Republic.

BUMPER CROP OF CITRUS FRUITS

Oranges and tangerines will be more plentiful this season than ever before, the Florida Citrus Commission says. Early and midseason Florida oranges are estimated at 51,600,000 boxes, an all-time high. This is an increase of 3,600,000 boxes over the previous year, most of which will be marketed as fresh fruit. Tangerines, a source of Vitamin C especially popular with children, will be abundant during the holiday season and afterwards. Valencia oranges, a late variety widely used for frozen concentrate, are also expected to set a production record, according to Department of Agriculture estimates.

PREMATURE BABIES NEED DOUBLE DOSE OF VITAMINS C AND D

Premature babies who do not get enough Vitamin C fail to gain weight or metabolize certain amino acids adequately, Dr. Donald J. Barnes of Detroit reports. "The premature infant properly should be given about twice the amount of Vitamin C and Vitamin D recommended for the full-term baby for the first two or three months of life—then as his growth pattern becomes that of a full-term baby the regular amount continued," he comments. The physician cautions that overdosage with Vitamin D may cause loss of calcium.

(Source: Journal of Mich. State Med. Soc., *53*:751 (July) 1954).

VITAMIN C AIDS IRON ABSORPTION

Children with iron deficiency anemia who receive Vitamin C in addition to an oral iron preparation show a significantly greater hemoglobin response than children who received iron with only a standard vitamin supplement, according to results noted at University Hospital, Baltimore, by Drs. Martin K. Gorten and J. Edmund Bradley. Each group consisted of 10 infants and children. Those on Vitamin C therapy received a daily dose of 500 to 750 mg. The investigators feel that "ascorbic acid does aid in the absorption and possibly the utilization of iron in a nutritional anemia of infancy and childhood."

(Source: Journal of Pediatrics, *45*:1 (July) 1954).

148 FOOD FALLACIES

A vast amount of food misinformation is in circulation, stemming from superstition, lack of education, unsupported claims and old wives' tales, according to a report by the community nutrition section of the American Dietetic Association. Among 148 common food fallacies noted by dietitians who were queried on the subject were the erroneous ideas that citrus fruits are "too acid to be handled by the body," that oysters increase fertility, that combinations of milk and orange juice are "poisonous," that frozen orange juice has less nutritive value than fresh, and that meat "dries up the blood."

(Source: Report on Project No. 1, Food Misinformation, Community Nutrition Section, American Dietetic Assn., 1952-53.)

MAKE MINE AN ORANGE AND A HAMBURGER!

Oranges were the favorite fruit and hamburger the best-liked of the protein-rich foods in a test of a new lunch plan conducted at the Demonstration School of the University of Georgia, which serves elementary and high school children. The new lunch pattern was devised by the Bureau of Human Nutrition and Home Economics and the technical staff of the Foods Distribution Branch, Production and Marketing Administration, both of the U. S. Department of Agriculture. It aims to provide one-third of the recommended daily allowance for children of various ages and to include protein rich foods, vegetables and fruits rich in Vitamin C, bread or cereal, butter or fortified margarine and milk.

(Source: Journal of the American Dietetic Assn., *30*:757 (August) 1954.)

SNAP-CAP PAPER MILK CONTAINER WINS HOUSEWIFE PREFERENCE, STUDY SHOWS

A consumer survey by an independent research organization, showing that 68 per cent of the housewives questioned prefer the American Can Company's paper milk container over other types, highlighted the Company's exhibit at the 19th Dairy Industries Exposition in Atlantic City.

Also featured at the exhibit was a presentation of Canco's thirteen 40-second movie trailers designed for dairy use to promote increased

consumption of milk in paper containers.

In order to get unbiased facts, the consumer study was made in New Orleans, a market where the Canco package is comparatively unknown. The preference of families for either of two types of paper quart containers, or for glass bottles, was measured.

Milk packaged in each type of paper carton was delivered free to 328 families for four days. The cartons had identical labels and were delivered by a local dairy. Periodic call-backs were made by the survey team and preferences recorded.

"The New Orleans study revealed an overwhelming preference for the Canco containers," stated William F. May, general manager of the Company's fibre milk department. "Approximately 40 per cent of the families interviewed said they generally have milk delivered in bottles, but almost half of these stated they would prefer to have milk delivered in Canco snap-cap cartons."

Questioned about ease of opening qualities of the two paper packages, 93 per cent of the housewives said they preferred Canco's, Mr. May said, because of its easier, faster snap-cap feature which can be opened and closed with one hand. The carton also is easier for children to handle, 83 per cent of the women said.

"Another interesting phase revealed by the survey," he added, "concerned ease of pouring, for which the can company's container was preferred by 56 per cent of the housewives, compared to 39 per cent for the competitive carton."

Qualities of the Canco container were described variously by the housewives as "easier to close," "simple to push down the cap," "can stack on top of each other in the refrigerator," "doesn't drip when pouring," and "re-inforced so it doesn't leak."

"In an industry that will produce more than 10 billion milk cartons in 1954, this is a very encouraging report," Mr. May stated. "Although the fibre milk carton has been a standard item for more than 20 years, it is apparent that the homemaker is always anxious for more convenience in her shopping and household activities.

"An objective survey of this type helps us to plan the expansion of our manufacturing facilities and to assist the dairy industry in its efforts to increase the consumption of milk."

LOW PENICILLIN REACTION RATE DISCLOSED BY EXTENSIVE SURVEY CONDUCTED BY PUBLIC HEALTH SERVICE

Washington, D. C.—The likelihood of your being sensitive to penicillin or its various types is extremely remote according to an extensive survey conducted by the Venereal Disease Program of the Public Health Service, it was revealed here recently.

The study which was undertaken in an effort to assess the true rate of allergic reactions to penicillin, disclosed that of 16,345 patients treated with penicillin only 109 or one-third of one percent experienced varying side effects with no fatalities. This rate is significantly lower than the generally accepted five to ten percent reaction rate for penicillin.

The survey was conducted by Dr. Clarence A. Smith, Dr. John C. Cutler and Eleanor V. Price. Dr. Smith, Chief of the Venereal Disease Program, Public Health Service, reported the results of the study recently before the Second Annual Symposium on Antibiotics sponsored by the Antibiotics Division of the Food and Drug Administration, U.S. Department of Health, Education and Welfare.

During the period from April 15 to August 15, 1954, 16,345 patients were given penicillin therapy at 24 Prevention and Control Centers where venereal diseases are treated. The clinicians of these centers located in 14 States volunteered to cooperate in such a study.

Of the patients treated, 75 percent received procaine penicillin in oil and aluminum monostearate, and 24 percent received benzathine penicillin G (Bicillin), a long-acting type.

Following a single treatment schedule, the only group in which a comparison between the two types of penicillin can be made, one-third of one percent experienced a reaction to procaine penicillin and aluminum monostearate, and about one-fourth of one percent to benzathine penicillin G (Bicillin). Dosage in the single treatment schedule was 600,000 units for uncomplicated gonorrhea and from 2,400,000 units to 6,000,000 units of penicillin for syphilis.

Other significant findings of the group revealed:

1. Penicillin has a low sensitizing potential as shown by the fact that less than one-half of one percent of 11,497 cases who reported no previous reaction to penicillin showed reaction upon re-treatment. In contrast one percent of those given penicillin for the first time showed reaction to it. However, if the patient reacted previously to penicillin, about one in 10 of this group developed a side effect following subsequent penicillin treatment.

2. That the incidence of reactions was greater in the white race than in the Negro and greater in females than in males. This would indicate a true race-sex differential rather than a greater tendency of white patients, particularly females, to complain or seek medical care.

3. That the incidence of reactions appeared to increase with the age of patients up to the age of 50 and then to fall off. Patients 10-19 years of age tolerated penicillin better than patients in the older age groups. Patients over 50 demonstrated a greater tolerance than patients 30-49.

ROBITUSSIN

Robitussin® A-C (Robitussin with Antihistamine and Codeine).

Description: Each 5 cc. (1 teaspoonful) contains glyceryl guaiacolate 100 mg., desoxyephedrine hydrochloride 1 mg., prophenpyridamine maleate 7.5 mg., and codeine phosphate 10.0 mg., in a palatable aromatic syrup.

Action and Uses: Robitussin A-C provides the superior expectorant-antitussive action of the Robitussin formula of glyceryl guaiacolate and desoxyephedrine hydrochloride augmented by the efficient, safe anti-

histaminic action of prophenpyridamine and the cough-suppressant effects of codeine. It is an "exempt narcotic." Indications: comprehensive treatment of cough in acute head and chest colds; acute and chronic bronchitis; laryngitis, pharyngitis, tracheitis; pertussis; influenza; measles; pulmonary tuberculosis; spasmodic bronchial cough, without dyspnea, in children as manifestation of allergy; cough associated with or accompanying cardiac disease.

Dosage: Adults, 1 or 2 teaspoonfuls every 2 to 3 hours as necessary. Children, ½ to 1 teaspoonful according to age, 3 or more times daily.

Contraindications: Caution is recommended in advanced cardiovascular disease on the basis of desoxyephedrine if there is any trend toward acceleration of the pulse or elevation of the blood pressure.

Available: Pints and gallons.

Source: A. H. Robins Co., Inc., Richmond 20, Va.

MEDICAL AGENCIES' GROUP ELECTS NEW OFFICERS

New York, N. Y.—L. W. Frohlich has been elected president of the Association of Medical Advertising Agencies, it was announced here. Robert Wilson and Mrs. Helen Haberman were elected vice presidents. Ira Nichols is treasurer; while Frank Dierson has been reappointed as general counsel and A. Douglas Brewer as executive secretary.

Both Mr. Frohlich and Mr. Wilson are presidents of agencies bearing their names. Mrs. Haberman is a vice president of William Douglas McAdams, Inc. Mr. Nichols is copy chief of Noyes and Sproul, Inc.

The Association, formed a year ago, is composed of agencies whose major activity is in the field of pharmaceuticals.

"Since the A.M.A.A.'s formation," Mr. Frohlich said, "We have moved ahead rapidly in the study of major problems involving professional promotion in all its forms."

The new president reported the latest developments in one of the Association's major projects, the preparation of a new, uniform and comprehensive method of evaluating periodicals.

"Under the sponsorship of the A.M.A.A., meetings have been held in New York and San Francisco, with publishers of hundreds of specialized professional journals," Mr. Frohlich said. "Other meetings with the Audit Bureau of Circulation and Business Publication Audit and specific sworn statement magazines have led to refinements in the evaluation procedure.

"Other groups as well as the A.M.A.A. are now taking steps toward the compilation of data for pharmaceutical advertisers similar to that available in the consumer field."

UNIQUE SERIES OF DOCUMENTS ON TB VACCINATION COMPLETED BY WHO FINAL REPORTS ON VACCINATION CAMPAIGNS IN 23 COUNTRIES COVER 30 MILLION PEOPLE

Geneva, September 13.—A permanent and unique record of the largest vaccination campaign ever undertaken is now available to tuberculosis specialists and public health workers as a result of the publication by the World Health Organization (WHO) of reports covering mass BCG vaccination against tuberculosis in 23 countries. (Czechoslovakia, Poland, Syria, Israel, Malta, Tunisia, Ecuador, Austria, Morocco, Tangiers, Greece, Yugoslavia, Egypt, Algeria, Finland, Lebanon, Palestine Refugees, Italy, Mexico, Hungary, Ceylon, India, Pakistan).

A total of nearly 30 million persons were tested with tuberculin, and almost 14 million of them received BCG vaccination against tuberculosis in the course of mass programmes conducted for three years by the International Tuberculosis Campaign.

Data on each person tested and vaccinated were recorded on individual cards which then were tabulated according to sex and age. These statistics were collected and analyzed by the Tuberculosis Research Office of the World Health Organization in Copenhagen. Publication of all the reports concerning the mass campaigns conducted from 1948 to 1951 is now complete and represents an important step in the systematic and carefully controlled investigation of BCG vaccine and vaccination undertaken by WHO.

Since June 1951, the work of the International Tuberculosis Campaign has been officially turned over to the World Health Organization and the UN Children's Fund (UNICEF). The campaign has now spread to 30 other countries, where tuberculin tests have been done to 90 million people, of whom 36 million have received BCG vaccination. The WHO Research Office is also analyzing results from these campaigns.

The International Tuberculosis Campaign grew out of an association formed very soon after World War II by the Danish Red Cross, the Norwegian Relief for Europe and the Swedish Red Cross to undertake BCG vaccination in several European countries as an emergency measure against tuberculosis. WHO and UNICEF joined this undertaking in 1948. During the 3-year period until 1951, an international staff of 200 doctors, 300 nurses, as well as over 1,000 national doctors, nurses and BCG technicians participated in the programme under uniform medical, organizational and statistical methods. The total ITC expenditures amounted to $5,000,000 and national expenditures are estimated to have equalled that amount.

The reports published by WHO will be of great importance for future tuberculosis control in the countries concerned. In some countries, the mass campaign statistics stand as the most reliable yardstick of the tuberculosis situation to date. Together, the series of reports provides a permanent record of what is probably the largest, most uniformly carried out immunization programme ever done.

The latest report, which rounds out the series, concerns Finland, which at the time of the campaign had a large number of tuberculosis deaths (an annual rate of about 150 per 100,000 population). A special research project is under way in that country, which is expected to give in future years valuable information of the effect of

mass BCG vaccination on tuberculosis mortality.

7TH ANNUAL CONVENTION —INTERNATIONAL ACADEMY OF PROCTOLOGY

Plan now to attend the 7th Annual Convention of the International Academy of Proctology at The Plaza Hotel, New York City, March 23 to 26, 1955. The International, National, and local Program Committees are planning an unusual seminar on anorectal and colon surgery. There will be special emphasis on anorectal presentations, and on panel discussions, as requested by those who attended the Chicago meeting in 1954.

Plans are being developed for wet clinics and lectures at the Jersey City Medical Center under the direction of Dr. Earl Halligan, surgeon-in-chief of the Medical Center.

Eminent speakers from all parts of the country and abroad will present interesting papers and motion picture demonstrations of their personal techniques. Mexico is expected to be very well represented at this meeting.

The delegates and trustees, and their wives, are cordially invited to cocktails and dinner on Tuesday evening, March 22, 1955, the evening before the official opening of the scientific activities of the convention. Both members and nonmembers of the Academy, and their wives, should plan to attend the Saturday night, March 26th, banquet. The Banquet Committee promises the best cocktails and hors d'oeuvres in New York (prepared by the masters of The Plaza cuisine), and the finest dance music and entertainment for your pleasure.

The Women's Auxiliary has planned a very unusual program for the wives of the members and their guests.

Please remember that all physicians and their wives are cordially invited to attend the annual conventions of the International Academy of Proctology, whether or not they are affiliated with the Academy. There is no fee for attendance at these teaching sessions of the Academy.

EXPERIMENTAL DRUGS TO CONTROL ATTACKS OF ASTHMA STUDIED IN GUINEA PIGS WITH AID OF SPECIAL CHAMBER

Milwaukee, Wisc.—An unusual "aerosol chamber" for guinea pigs, first used to test the effectiveness of antihistamines, is now being employed in studies of experimental drugs to prevent attacks of bronchial asthma, at Lakeside Laboratories, Inc., here.

Patrick Nuhfer, chief of pharmacology, explained how it works. Under a bell jar, on a stand, are four guinea pigs in four compartments. Compressed air is blown upward under constant pressure, through a nebulizer containing a solution of histamine or acetylcholine. These solutions produce symptoms of asthma.

Guinea pigs are used because the musculature of their bronchial tubes seems most susceptible to drugs whose effects mimic asthmatic attacks.

Air compressing apparatus specially developed at Lakeside keeps the pressure constant, eliminates noise and is equipped with a safety valve.

The first step is to standardize the group of animals, to learn to anticipate their reactions to the symptom-producing drugs. Usually 90% of the guinea pigs will develop severe asthmatic symptoms when the nebulizer introduces histamine or acetylcholine into the chamber. The selected animals are first given an experimental drug by stomach tube, to see if it will help to control the "attack." About 45 minutes later, they are placed in the compartments where they are subjected to aerosol spray.

A few hours later, the histamine or acetylcholine spray again tests the effectiveness of the experimental drug, this time for prolonged action.

ASPIRIN IS PREFERRED IN ARTHRITIS CASES

Aspirin is "the drug of choice for the relief of pain in the treatment of rheumatoid arthritis," according to Dr. Stacey R. Mettier of the University of California Medical School, writing in *GP* (10:89, 1954).

Pointing out that cortisone therapy in arthritis "has not fulfilled its early promise, "Dr. Mettier reports that patients themselves realize that aspirin is the drug that gives them greatest relief. Aspirin may be prescribed in "doses of 0.3 to 0.6 Gm. every two or three hours throughout the waking hours of the day, and may attain a total dosage as high as 4 to 6 Gm.," he says. In addition to the analgesic effect of aspirin, Dr. Mettier notes that he has long prescribed it in combination with sedatives.

In outlining a basic program for the treatment of rheumatoid arthritis, Dr. Mettier emphasizes that medication such as aspirin is helpful in "alleviating pain and stiffness and in bringing about a remission of illness." Another important therapeutic measure is bed rest and, if needed, rest for the afflicted joint in a plaster cast.

To prevent ankylosis, appropriate exercise should accompany the rest. Physical therapy to prevent or correct deformities is also basic in the treatment of rheumatoid arthritis. Dr. Mettier adds that psychotherapy has its place in treating arthritic patients, and suggests the physician adopt an optimistic attitude to encourage the patient to work toward a useful future.

ISUPREL TERMED BENEFICIAL IN PULMONARY EMPHYSEMA

Rochester, Minn.—Use of the bronchodilator Isuprel in aerosol form consistently produces improvement of symptoms in diffuse obstructive pulmonary emphysema, according to Dr. R. Drew Miller of the Mayo Clinic and Mayo Foundation. His report is published in the *Journal of the American Geriatrics Society* (2:502, Aug. 1954.)

In many instances, Dr. Miller states, measurement of vital capacity and maximal breathing capacity showed a beneficial effect lasting several hours after aerosol administration of Isuprel. The amount given was 0.5 ml. of a 1:200 solution, with equal parts of water.

A hand bulb may be used as the source of pressure for treatment periods of ten minutes or less, the doctor says, suggesting that an oxygen tank be used for longer periods.

Noting that emphysema is most frequently encountered in middle-aged and elderly men, he says that severe dyspnea and other symptoms are commonly experienced in the morning upon awakening. These symptoms can be alleviated by the use of Isuprel immediately after the patient arises, it is pointed out. Isuprel is manufactured by Winthrop-Stearns Inc.

In addition to medical treatment of the condition, physical and surgical measures are also helpful. Physical treatment is directed chiefly at elevation of the position of the diaphragm following expiration of the breath. Current surgical procedures are designed to collapse or remove large emphysematous pneumatoceles, the report says.

CLOSED-CIRCUIT PROGRAM

Kansas City, Mo., Dec. 27.—More than 15,000 physicians will gather in 57 cities on February 24 to watch the largest closed-circuit television program ever staged.

The program, jointly sponsored by the American Academy of General Practice, Kansas City, Missouri, and Wyeth Laboratories, Philadelphia, Pennsylvania, will feature six internationally known medical authorities who will discuss "The Management of Streptococcal Infection and Its Complications."

This is the first time that the Academy has used television to bring postgraduate education to members in all parts of the country. The audience will be the largest ever to see a closed-circuit program. It will be the largest multiple-city, closed-circuit telecast in the history of the television industry.

"We are truly pioneers in the real meaning of the word," Dr. William B. Hildebrand, president of the Academy said. "The significance of this television symposium in our postgraduate training program assumes tremendous proportions when the enormity of the project is contemplated.

"It is within the realm of possibility that within a few years all of us who are participating in postgraduate medical work will 'go to school' via this new medium.

"The opportunity such a program affords to literally thousands of physicians who, by the very nature of their profession, cannot leave their home communities for advanced medical work is most encouraging. This type program will undoubtedly advance the standards of the profession many years," he said.

A top-flight panel of distinguished physicians has been assembled to participate in the symposium. Dr. Hildebrand will act as moderator. Those who will deliver scientific papers are:

Dr. John D. Keith, associate professor of pediatrics at the University of Toronto and Physician-in-Charge of the Cardiac Clinic and Service of Toronto Sick Children's Hospital. Dr. Keith will speak on "Complications of Streptococcal Infection."

Dr. Burtis B. Breese, assistant

Meat...

and the Dietary Management of Ulcerative Colitis

Restoration of depleted body proteins constitutes a cardinal aim in the control of nutritional disorders resulting from chronic ulcerative colitis.[1] Intestinal excretion of inflammatory exudate and blood contributes significantly to the protein deficit.[2,3]

For clinical improvement in the patient, a positive nitrogen balance must be achieved and maintained.[3] Correction of a serious protein deficit may require high protein feedings for several months. An incompletely corrected, unrecognized chronic protein deficiency may interfere with recovery.

Lean meat in liberal amounts (at least 8 ounces per day) will provide much of the high protein intake recommended in the nutritional management of the colitis patient.[4]

In cooked form it contains from 25 to 30 per cent of high biologic quality protein. Valuable amounts of B vitamins and iron, phosphorus, and potassium are other important contributions made by meat. Its appeal to the palate and its easy and almost complete digestibility enhance its usefulness in the therapeutic diet.

1. Bargen, J. A.: Problems of Nutrition in Ulcerative Disease of the Digestive Tract, J. Michigan M. Soc. *53*:407 (Apr.) 1954.

2. Kirsner, J. B., and Sheffner, A. L.: Studies on Amino Acid Excretion in Man; VII. Effect of Various Protein Supplements in a Normal Man, Two Patients with Benign Gastric Ulcer and Two Patients with Chronic Ulcerative Colitis, J. Clin. Invest. *29*:828 (June) 1950.

3. Sappington, T. S., and Bockus, H. L.: Nitrogen Metabolism in Chronic Idiopathic Ulcerative Colitis and Its Therapeutic Significance, Ann. Int. Med. *31*:282 (Aug.) 1949.

4. Committee on Dietetics of the Mayo Clinic; Chronic Ulcerative Colitis: Dietary Program, in Mayo Clinic Diet Manual, ed. 2, Philadelphia, W. B. Saunders Company, 1954, pp. 59-62.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago... Members Throughout the United States

professor of pediatrics at the University of Rochester, will discuss "Diagnosis and Treatment of Streptococcal Infection."

Dr. Lowell A. Rantz, Associate professor of medicine at Stanford University School of Medicine, will speak on "Epidemiology of Streptococcal Infection."

Dr. Gene H. Stollerman, director of Irvington House, Irvington-on-Hudson, will discuss "Prevention of Rheumatic Fever."

Dr. Keith Hammond of Paoli, Indiana, a member of the Academy, will conduct a question period on "Applications to General Practice."

Dr. Charles H. Rammelkamp, Jr., Professor of medicine at Western Reserve University and Director of the Commission on Streptococcal Diseases, Armed Forces Epidemiology Board, will summarize the papers presented and give an outlook on the future of streptococcal infection.

The hour-long television symposium will originate in CBS television studios in New York City from 6 to 7 p.m. (EST), and will be transmitted to 57 cities.

SPINAL ANALGESIA WITH PONTOCAINE CALLED CHOICE METHOD IN PROSTATECTOMY

Chicago.—Low spinal analgesia with Pontocaine is the choice method of anesthesia for most transurethral prostatectomies, regardless of age, risk or complicating conditions, according to Drs. Constance L. Graves, F. M. Sellers and Mary Karp of Northwestern University Medical School.

Reporting on an analysis of 1,176 prostatectomies in 1,068 patients (*J. A. M. A.*, 156:1045, Nov. 13, 1954), the investigators note that low spinal was used in 80 per cent of the operations. This procedure was "satisfactory" and "gave a high degree of safety." There were relatively few reactions and, in most cases, they were not serious. In the opinion of authors, nausea and vomiting were due to the operative procedure itself, rather than to Pontocaine or the spinal method.

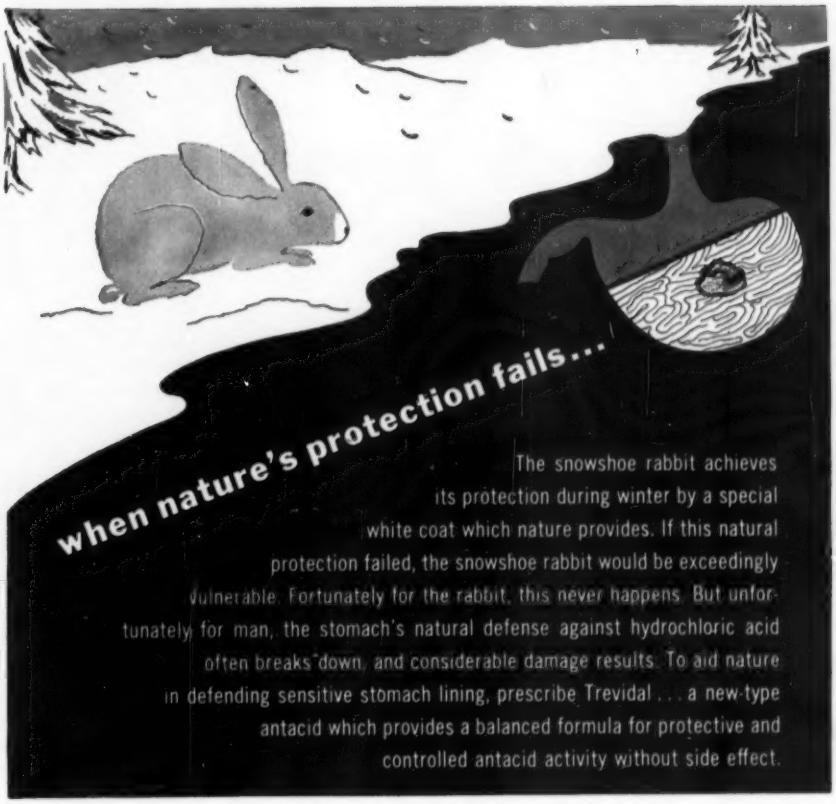
Almost 40 per cent of the patients had some form of cardiovascular disease, the vast majority of hypertensive and arteriosclerotic origin. The commonest disease was carcinoma of the prostate.

One of the most significant findings in the study, which covered the 10-year period from 1942 to 1952, was the fact that "no deaths occurred after this operation since 1949." The mortality rate for the entire period was 1.3 per cent. In reviewing the number of deaths, the doctors conclude "the anesthesia used seemed incidental to the cause of death in almost all the cases."

Low spinal analgesia with Pontocaine is called safer for patients with respiratory or cardiorespiratory conditions. In long procedures, it offers greater safety for older patients than the intravenous method, in which large doses may be required, the article states.

Additionally, a conscious patient is able to report unusual pain that may indicate perforation of the bladder. Postoperatively, the doctors say, such patients require less supervision.

Pontocaine is manufactured by Winthrop-Stearns Inc.



The snowshoe rabbit achieves its protection during winter by a special white coat which nature provides. If this natural protection failed, the snowshoe rabbit would be exceedingly vulnerable. Fortunately for the rabbit, this never happens. But unfortunately for man, the stomach's natural defense against hydrochloric acid often breaks down, and considerable damage results. To aid nature in defending sensitive stomach lining, prescribe Trevidal . . . a new-type antacid which provides a balanced formula for protective and controlled antacid activity without side effect.

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EACH TABLET CONTAINS:

Unique vegetable mucin supplies protective coat to irritated stomach lining	**Regonol*‡** . . . . . **100 mg.**
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Binder controls and extends antacid activity	**Egraine†‡** . . . . . **45 mg.**

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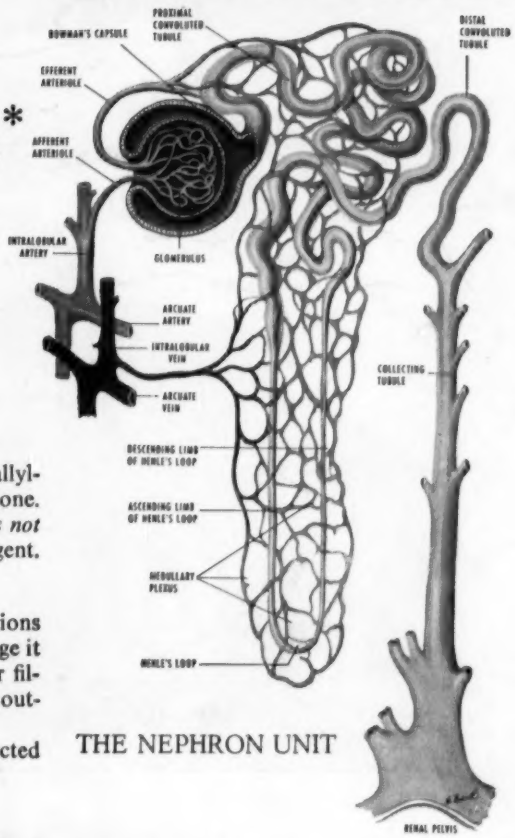

THE NEPHRON UNIT

STRUCTURE

Mictine, brand of aminometramide, is l-allyl-3-ethyl-6-aminotetrahydropyrimidinedione. Mictine—result of years of research—*is not* a mercurial, xanthine or sulfonamide agent.

ACTION AND EFFECTIVENESS

Mictine inhibits reabsorption of sodium ions by the renal tubule. In therapeutic dosage it has not caused any effect on glomerular filtration rate, renal plasma flow, cardiac output, heart rate or blood pressure.

Approximately 70 per cent of unselected edematous patients respond to Mictine.

TOLERANCE

Mictine is without serious toxic effects as used. It has not produced any alteration in the blood or blood-forming organs or in renal or hepatic function. At times headache or gastrointestinal symptoms (anorexia or nausea but rarely vomiting or diarrhea) have occurred, however, these effects may be reduced to a minimum by giving Mictine on an interrupted dosage schedule.

ADMINISTRATION

Mictine is useful primarily in the *maintenance* of an edema-free state and in the *initial and continuing* control of patients in mild congestive failure. In such patients, dosage is one to four tablets daily *with meals*, in divided doses on an interrupted schedule. An interrupted dosage schedule may be accomplished by giving the drug on alternate days; or by its administration for three consecutive days and its omission for four consecutive days.

Mictine also may be used for *initial* diuresis in *more severe* congestive states, particularly when mercurial diuretics are contraindicated. In these more severe congestive states, dosage is four to six tablets daily *with meals*, in divided doses on an interrupted schedule similar to those mentioned above.

SUPPLIED

Uncoated tablets of 200 mg. in bottles of 100.

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